

INFORMATION PLEASE
ALMANAC
1958

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1958



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DAN GOLENPAUL ASSOCIATES

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Editor

DAN GOLENPAUL

Foreword

The 1958 edition of the Information Please Almanac will be the 12th since we began publication in 1947. Our purpose from the outset was to develop a modern readable almanac that would serve the many important needs for information and guidance in our daily lives. We think we have successfully met the test of time and the test of public acceptance.

Although a part of each edition is of necessity standard and unchanged, the greater portion of material is new each year. The Information Please Almanac is in a continual state of editorial development. Every new edition includes major new features that we believe are available only in our book.

The editorial content of the Information Please Almanac combines scholarship and popular interest. We never take our readers' acceptance for granted. Each new edition is a challenge to produce a better book providing greater usefulness.

We also would like to think ours is the perfect book since we have gone to great pains to avoid errors. All material is carefully scrutinized many times. You, though, may spot an error that everybody missed; if so we would like to hear about it. We promise to correct the error and this we gratefully advise will be your only reward.

See "OPERATION NEWS," page 20,
A Guide for Newspaper Reading.

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NEWS RECORD OF 1957

See "OPERATION NEWS," page 20
A Guide to Newspaper Reading

(Separate articles beginning on page 16 give more specific information on Labor, Russia, Zhukov and Red Moon)

JANUARY 1957

GRINNING FROM ear to ear, a neatly dressed man in Waterbury, Conn., admitted that he was one of the nation's weirdest and most elusive criminals—"The Mad Bomber." Over the course of 16 years he had been making bombs, 47 in all, in his garage and planting them in public places in the New York area to spite the Consolidated Edison Co. Following the arrest of George Metesky, many other persons fancied the idea of bomb planting. Police in the North Atlantic States tracked down some 300 telephoned bomb warnings—all hoaxes. Most of them came from kids wanting to scare their schools into closing for the day . . . Two famous American expatriates hit the headlines. In the pink palace in Monaco, Princess Grace (nee Kelly of Philadelphia) gave birth to Princess Caroline Louise Marguerite, to the immense joy of the jittery father, Prince Rainier III. And Ingrid Bergman made her first visit to the U. S. in almost 8 years. In a 36-hour stay, she got a film critics' award and a jungle-gym for her small boy . . . In London there was a rather sad political changing of the guard. For 21 years Sir Anthony Eden had hoped to be Prime Minister of England; when he finally achieved it, he lasted 21 months, then resigned . . .

1 Eisenhower orders additional over-the-quota Hungarian refugees to be admitted.

1 Khrushchev unexpectedly toasts Stalin.

3 Democrats organize the Senate when Gov. Frank Lausche of Ohio votes with them.

4 Senate beats, 55 to 38, attempt to check filibusters.

5 Eisenhower asks special joint session of Congress for power to use military and economic aid in Middle East—the Eisenhower Doctrine.

6 967 Egyptian Jews deported to Naples.

7 Chinese Communist Premier Chou En-lai makes pilgrimage to Moscow, praising Soviet leadership.

EDEN RESIGNS

Jan. 9 Prime Minister Anthony Eden, 59, resigned after only 21 months in office. He gave ill health as the reason, but many people thought the fiasco of the British-French attack in Suez was a contributory factor. Eden went to New

Zealand for a rest. In April he went to Boston and underwent bile-duct surgery. In May he returned to England and went into retirement.

10 Harold Macmillan, Chancellor of the Exchequer, named British Prime Minister.

10 Eisenhower warns of inflation peril in State-of-the-Union message.

12 Hungary decrees death penalty for strikers.

13-15 Eisenhower flies to drought area; Tex., Okla., N. Mex., Ariz., Colo., Kans.

14 U. S. gives U. N. new 5-point plan for arms reduction.

15 Egypt announces seizure of British and French banks effective Jan. 16.

16 Eisenhower budget up \$3 billion to \$71.8 billion.

17 Khrushchev ends "de-Stalinization," praising Stalin as a great Communist.

18 Russia and Red China jointly denounce Eisenhower Doctrine and promise protection to Middle East countries.

18 3 U. S. B-52 jet bombers return after around world non-stop flight in record 45 hours 19 minutes.

19 Egypt, Saudi Arabia and Syria promise Jordan \$36 million annual subsidy so it can cut British tie.

20 Eisenhower and Nixon take oaths of office in private. Public inauguration Jan. 21.

20 Wladyslaw Gomulka wins vote of confidence in Polish election.

THE MAD BOMBER

Jan. 21 George P. Metesky, 54, arrested as New York's "Mad Bomber." He had strewn 32 homemade bombs in public places over the course of 16 years, injuring fifteen persons. He had a real or fancied grievance against the Consolidated Edison Co., for which he had worked 27 years ago, blaming it for a case of tuberculosis and failure to compensate him. In his mind, the bombs were revenge against Con Ed and its customers. He was taken care of by his sisters in Waterbury, Conn., and drove a big car to strew his bombs. In April he was removed to New York State's Matteawan Hospital

for the criminally insane, suffering from tuberculosis described as incurable.

- 22 H. Meade Alcorn, Jr. of Connecticut is new Republican National Chairman.
 - 25 F.B.I. arrests 3 in New York as Russian spies.
 - 26 Indian-occupied sector of Kashmir and Jammu formally becomes part of India.
 - 28 Eisenhower asks Federal fund of \$2 billion for a 4-year school building program.
 - 28 Symington Senate subcommittee says U. S. is losing air supremacy race to Russia.
 - 28 Defense Secretary Wilson says youths dodged Korean War by joining National Guard.
 - 29 King Saud of Saudi Arabia snubbed by New York's Mayor Wagner on arrival to visit Eisenhower.
 - 30 House passes Eisenhower Mid-East Doctrine, 355 to 61.
 - 31 Air liner crashes into California schoolyard after collision with jet fighter.
 - 31 Eisenhower urges Congress to liberalize immigration law.
- DIED:* 14—Humphrey Bogart, 57; 16—Arturo Toscanini, 89.

FEBRUARY 1957

IN PARIS, Monsieur Christian Dior decreed that skirts should be 3 to 4 inches longer. By the rules of the game, this meant that the docile husbands of America would shell out \$ for wives' new garb . . . On the other hand, our free enterprise system was bending its brains to help us out of our problems. The Radio Corp. of America offered a portable electronic system for amateur fishermen; it shoots sound waves, hitting the fish and bouncing back to the old so-and-so with the pole, who thus cheatingly discovers where the poor fish is . . . Another new product, keeping pace with the advance of civilization, came from Sassy, International, Inc., which developed a beer that doesn't taste like beer. In deference to female customers, it tastes like some kind of cola, or perhaps rum punch, or perhaps Lydia Pinkham's Vegetable Compound . . . And furthermore, a psychiatric professor discovered a new neurosis. Audiophilia. It means an addiction to playing hi-fi records so loud that the sound "reaches the level of physical pain."

- 1 Tug strike cripples New York harbor.
- 1 Northeast Airlines Florida-bound air liner crashes at New York take-off, killing 20 of 101 aboard.
- 2 U. N. again calls on Israel to withdraw from Gaza Strip and Gulf of Aqaba.

- 2 Senate Election Subcommittee reports that 1956 Federal election campaigns cost \$33 million.
- 6 Russia puts 4 "spies" for U. S. on Moscow television.
- 7 Russia expels 2 U. S. military attaches as "spies."
- 8 Britain denies rumors of rift between Queen Elizabeth and her husband, the Duke of Edinburgh.
- 10 U. S. cuts price supports for 8 major farm products.
- 11 U. S. offers Israel pledges on Aqaba and Gaza if it will withdraw.
- 12 Dock workers (International Longshoremen's Association) resume strike from Maine to Virginia as 80-day Taft-Hartley law injunction expires.
- 15 Israel fails to accept U. S. pledges on Aqaba and Gaza.
- 16 Hungary concedes that 196,000 left the country since Oct., 1956.
- 17 Fire kills 71 in old folks' home in Warrenton, Mo.
- 18 Arthur Miller, playwright, indicted for contempt of Congress for silence about associates at Red probe.
- 19 Senate Democrats vote to oppose sanctions on Israel.
- 20 Eisenhower, on the air, says U. N. future depends on making Israel withdraw troops from Egypt.
- 21 Israel rejects Eisenhower appeal.
- 23 Premier Tanzan Ishibashi of Japan resigns; his successor is Foreign Minister Nobusuke Kishi.
- 24 Pope Pius XII approves use of drugs to ease painful deaths even if they might shorten life.
- 24 U. S. promises Israel to support keeping U. N. troops at Gulf of Aqaba.
- 25 Supreme Court rules 6 to 3 that professional football is a business subject to antitrust laws.
- 26 Senate opens inquiry on racketeering in labor unions.

MARCH 1957

FROM THE ISLAND of Trinidad came a fad. Calypso songs (mainly phoney) swept the pop-music business like nothing since rock 'n' roll. We were treated to Robert Mitchum croaking "Mama Look-a Booboo." And you could buy do-it-yourself Calypso Kits (bongo drums, a gourd and a pair of maracas) for \$24.50 and up . . . A labor boss created his own little fad. Dave Beck pleaded the Fifth Amendment 117 times (possibly a world's record) to avoid telling Senators what he had done with \$320,000 of Teamsters union funds . . . In a far part of the world there was something

really new. For the first time in the memory of civilization, a strictly peace-preserving international army—United Nations troops from Denmark, Norway, Sweden, India, Colombia—moved into the Gaza Strip to keep Egypt and Israel from clawing at each other . . . Here at home, General Motors came to the rescue of those frustrated people who couldn't find a sufficiently expensive car. It whipped out the Cadillac Eldorado Brougham, a name that conjured up the best features of the raucous California Gold Rush plus the snootiest British aristocracy. Cost only \$13,074 (a record for American cars) and gave you a tissue box, vanity case, lipstick and four gold-finished drinking cups.

- 1 Israel pledges "full and prompt withdrawal" from Gaza Strip and Gulf of Aqaba.
- 2 Eisenhower names Charles Evans Whitaker, Missouri judge, to Supreme Court.
- 4 Ben-Gourion orders Israeli withdrawal from Gaza and Aqaba despite protest demonstrations.
- 5 Eisenhower Doctrine for Mid-East passes Senate, 72 to 19. (March 7—House completes Congressional approval, 350 to 60.)

GHANA—NEW NEGRO NATION

Mar. 6 A new nation, Ghana, formerly the British colony in Africa known as the Gold Coast, attained full independence. It remained in the British Commonwealth as the first Negro member-nation. The name Ghana commemorates a Negro nation which flourished in Africa for 900 years until it disintegrated 500 years ago. (See "Other Nations of World" for additional details.)

- 6 U. N. troops take over Gaza Strip as Israelis leave.
- 8 U. N. troops take over at Gulf of Aqaba.
- 9 Egypt rejects American-backed plan to split Suez Canal tolls 50-50 with U. N.
- 11 Boeing jet makes fastest transcontinental passenger flight—Seattle to Baltimore in 3 hours 48 minutes.
- 12 Vice President Nixon discusses U. S. bases in Ethiopia with Emperor Haile Selassie.
- 13 40 killed in Havana as students try in vain to storm President Batista's palace.
- 13 FBI arrests on bribery charge James R. Hoffa, vice president of International Brotherhood of Teamsters.
- 14 Egypt sends new governor into Gaza Strip.
- 14 Martial law in Indonesia as outer islands rebel against Java government.

17 President Magsaysay of the Philippines killed in plane crash. Vice President Garcia succeeds him.

18 4 high officers of Teamsters' Union indicted for contempt of Senate for silence at inquiry.

20 Pres. Eisenhower and Prime Minister Macmillan meet in Bermuda for talks.

21 Vice President Nixon returns from 20,000-mile African tour.

22 San Francisco has worst quake since 1906; no deaths.

24 U. S. agrees to give Britain guided missiles capable of reaching Moscow.

22-26 Blizzards kill 48 in 10 Great Plains states.

25 6 nations sign in Rome treaties for Euratom (pooling of atomic resources) and tariff-free common market.

26 Air Force Chief Gen. Nathan Twining appointed to succeed Adm. Radford as Chairman of Joint Chiefs of Staff.

26 Dave Beck, Teamsters union president, invokes 5th Amendment 117 times at Senate inquiry.

27 2 U. S. aid officials killed by bandits in Iran; wife of one is kidnaped. (Found dead Mar. 31.)

29 AFL-CIO suspends Dave Beck as vice president.

30 Navy commissions 2nd nuclear-powered submarine, *The Seawolf*.

DIED: 11—Adm. Richard E. Byrd, 68; 28—Christopher Morley, 66.

APRIL 1957

SOME OF US THOUGHT World War III might break out. The powerful U. S. 6th Fleet (perhaps 50 ships in all) steamed with dramatic suddenness to the eastern end of the Mediterranean Sea. The little kingdom of Jordan was in danger of being gobbled up by pro-Communist Egypt and Syria. But Jordan's young King Hussein (21), who had been called a playboy, had guts, saved country . . . Here at home, people were buying two automobiles instead of one. Two-car families shot up by 14%, and an estimated 25% of wives were badgering their husbands to buy another . . . People were forgetting that lung cancer might be encouraged by cigarette-smoking. The scare of 1953 wore off, and the Department of Agriculture estimated that 1957 cigarette sales would exceed last year's 392 billion, or 171 packs for every American above the age of 14.

1 U. S. lifts 5-month ban on travel by citizens to Egypt, Syria, Jordan and Israel.

2 Tornado kills 9 in Dallas, injures over 400.

- 3 Democrats retain control of Senate as Texas Republican loses to Ralph W. Yarborough, Democrat.
- 4 Britain announces drastic cut in armed forces; will rely on guided missiles with nuclear warheads.
- 6 First U. S. oil tanker sails Gulf of Aqaba to Israel; unmolested by Egypt.
- 7 Sir Anthony Eden goes to hospital in Boston.
- 8 Paris cheers Queen Elizabeth II and Prince Philip, beginning 4-day state visit.
- 8 Saudi Arabia extends for 5 years U. S. air base lease at Dhahran.
- 9 Britain cuts taxes.
- 10 Mr. and Mrs. Jack Soble plead guilty to spying for Russia.
- 13 Post offices closed; no mail deliveries. Postmaster General Summerfield battles Congress for more money.
- 14 King Hussein of Jordan ousts pro-Egyptians and pro-Communists from government.
- 15 Congress votes \$41 million extra for Post Office, ending squabble that caused curtailment of mail deliveries.
- 17 Charles Van Doren, winner of \$129,000 on television quiz, marries Geraldine Ann Bernstein.
- 17 Archbishop Makarios, Ethnarch of Cyprus, freed, arrives in Greece after 13 months of British banishment.
- 19 Russia warns West of retaliation if East Germans revolt.
- 20 Replica of *Mayflower* sails from Plymouth, England, for Plymouth, Mass.
- 22 Dulles denies U. S. incites satellite revolts but predicts they will win freedom in time.
- 24 Egypt gives Suez Canal plan to U. N.
- 24 Eisenhower warns that U. S. regards independence of Jordan as vital.
- 25 U. S. orders 6th fleet to Middle East waters; King Hussein puts Jordan under martial law.
- 26 U. N. to try Egypt Suez plan, although not liking it.
- 28 One-way airways envisaged in new U. S. plane control plan.
- 29 U. S. grants \$10 million aid to Jordan with no strings.
- 30 Russia offers U. S. a trade on "open skies" aerial inspection.

MAY 1957

MAN OF THE MONTH was the Rev. Dr. William Franklin Graham, 38, known as Billy. Having preached to some 18 million persons throughout the world, he invaded New York for the greatest evange-

listic crusade the nation has experienced. Up to 18,000 persons heard him preach every night, except Mondays, week in and week out in Madison Square Garden; and each night several hundred went down front to make "decisions for Christ." Original budget for the crusade: \$900,000, of which \$225,000 was allotted for publicity and advertising . . . In Washington, one of the most controversial figures of his time died at the age of 48: Sen. Joseph R. McCarthy, R., Wis. . . . Also in Washington, there was a storm over President Eisenhower's whopping \$71.8 billion budget, and one of the critics was his own brother, Edgar. Lapel buttons saying "I like Edgar" appeared . . . The columnists decided that Elvis Presley was the highest-paid movie star ever; he was in Hollywood to star in his third picture, "Jailhouse Rock," for an honorarium of \$250,000 plus half the profits . . . Times were indeed good. A drive-in restaurant in Texas treated its automobile patrons to mobile air conditioning along with the french-fries.

- 2 Sen. Joseph R. McCarthy (R. Wisc.) 48, dies of acute hepatic failure in Bethesda Naval Hospital in Maryland.
- 2 Dave Beck indicted for evading \$56,419 taxes in 1950.

COSTELLO SHOT

May 2 Frank Costello, a gambler with nationwide operations, suffered a slightly nicked skull when somebody shot at him as he was entering his New York City apartment. Taken to the hospital, police found in his pocket a memorandum of "gross casino wins" of \$651,284. The figure corresponded (according to the N. Y. District Attorney's office) with the gross win of the new Tropicana Hotel in Las Vegas, Nev. Costello refused to talk about a possible assailant, and refused to explain the "gross wins" memorandum. For this he was sentenced to 30 days in jail for contempt, but was released after 15 days, pending appeal. On Aug. 19, a small-time gambler named Vincente Gigante, a former prize-fighter, was arrested on suspicion of having been Costello's assailant.

- 3 Most of U. S. 6th Fleet recalled from eastern Mediterranean as Jordan remains calm under King Hussein.
- 6 Italian Cabinet of Premier Antonio Segni overthrown.
- 7 U. S. sends guided missile unit to Formosa.

- 7 Gambler Frank Costello jailed for contempt; he refuses to explain \$651,284 "casino wins."
- 7 Russia announces plan to decentralize industry control.
- 8 Dave Beck, teamster union boss, pleads Fifth Amendment 29 more times.
- 10 Dictator of Colombia, Gen. Gustavo Rojas Pinilla, overthrown by popular uprising.
- 12 King Saud of Saudi Arabia visits Iraq to bolster Mid-East anti-Communist and anti-Egyptian stand.
- 12 The Marquis Alfonso de Portago, noted Spanish auto racer, killed in Italy's Thousand Mile race.
- 13 Britain ends boycott of Suez Canal.
- 14 Eisenhower pleads for budget on television.
- 15 Billy Graham opens 47-day New York crusade.
- 15 British set off their first H-bomb over mid-Pacific.
- 16 U. S. launches third and smallest atomic submarine, the *Skate*, at Groton, Conn.
- 20 Dave Beck expelled from A.F.L.-C.I.O. council.
- 21 Eisenhower warns foreign aid cut could mean war.
- 21 Socialist Premier Guy Mollet of France resigns after sixteen months in office, longest post-war tenure.
- 23 New Swedish-American *Gripsholm*, biggest Scandinavian liner, greeted in New York.
- 24 Anti-American riots in Formosa wreck U. S. Embassy.
- 25 Dave Beck announces he won't run again for Teamsters' Union presidency.
- 27 West Germany again appeals to Russia for negotiations on Germany re-unification.
- 28 U. S. sets off first atomic blast in new series in Nevada.
- 30 British defy U. S. wishes and relax ban on trade with Red China.
- 31 Arthur Miller, playwright, found guilty of contempt of Congress for refusing to name Communists he knew in 1947.

DIED: 1—Sen. Joseph R. McCarthy (R., Wisc.), 48; 9—Ezio Pinza, 64.

BOY IN WELL

May 16 Benny Hooper, 7, fell into a well which his father, a truck driver, had been digging in the back yard of their home in Manorville, L. I. His father had found water in the sand 21 feet down. Benny's cries could be heard for an hour and then sand seeped down on him. An oxygen hose was forced down to him. All that night and all the next day rescuers dug a parallel shaft a few feet away and then tunneled toward Benny. Nearly everyone believed Benny must be dead. At 7:10 p.m. May 17 a rescuer reached Benny and pulled him to the surface. He was alive, and he recovered.

GIRARD ACCUSED

May 16 Army Specialist 3/c William S. Girard, of Ottawa, Ill., will be turned over to Japan for trial, U. S. military authorities announced. Girard was accused of fatally shooting a Japanese woman while trying to scare her off a U. S. rifle range. (Shooting happened Jan. 30.) On May 17, Secretary of Defense Wilson ordered he not be turned over to Japanese. The Supreme Court ruled July 11 that U. S. status-of-forces agreement with foreign countries was constitutional, so the government was within its

rights in turning Girard over to Japan for trial. His trial in a Japanese court opened Aug. 26.

JUNE 1957

SHIP OF THE MONTH was Mayflower II—a rebirth of the Pilgrims' little trans-Atlantic liner that brought millions of so many of our ancestors to these shores. The new Mayflower bobbed across in 53 days, beating the Pilgrims' time by 14 days and their profits by quite a wampum. After touching Plymouth, she touched gold in New York, where sightseers flocked aboard at 95¢ a throw . . . We were treated to two scares. The American Cancer Society told us 2-pack-a-day cigarette smokers died of lung cancer in a ratio of 20 to 1 as compared to non-smokers. And geneticists told us that merely testing the H-bomb would mean "hundreds of thousands of persons will be diseased or deformed or will die prematurely." . . . Undaunted, we went joy-riding in the pint-sized foreign cars. The fancy sport models from abroad no longer were concentrated on the East Coast, but were buzzing throughout the Mid-West. In 1955 we bought only 56,000 copies; in 1956 another 100,000; and it looked like the itch would double the sales in 1957. . . . There was a hubbub about the Supreme Court—too radical. *The Daily News* of New York suggested impeachment of Justices. Columnist David Lawrence favored popular election of the Justices. . . . In Paris,

justice caught up with the eminent party-giver, Elsa Maxwell. She had to pay \$840 damages to former King Farouk of Egypt for telling him she did not associate with "clowns, monkeys, depraved people or malefactors."

- 2 Khrushchev interviewed on U. S. television.
- 3 Supreme Court rules that Du Pont controls General Motors in violation of anti-trust laws.
- 4 U. S. agrees to let Japan try Army Specialist 3/C William S. Girard for killing Japanese woman.
- 4 Dave Beck, Jr. pleads 5th Amendment 124 times before Senate rackets investigation.
- 4 American Cancer Society reports "spectacular" relationship between cigarette smoking and lung cancer.
- 5 American Medical Association condemns use of stimulant amphetamine pills by athletes.
- 6 Auto industry decided to de-emphasize speed and horsepower in promotion.
- 7 U. S. grants \$48.9 million loan aid to Communist Poland.
- 9 Sen. Knowland suggests dropping Norway from NATO in exchange for Russian withdrawal from Hungary.
- 10 President Eisenhower makes quick recovery from "mild stomach upset."

CONSERVATIVES WIN IN CANADA

June 10 Conservative Party wins Canadian election, ousting the Liberals after they had been in power for 22 years. New Prime Minister is John Diefenbaker. The Conservatives indicated that they did not intend to change the welfare-state aspects introduced by the long Liberal regime.

MAYFLOWER II ARRIVES

June 12 Mayflower II reaches Provincetown, Mass., after sailing fifty-three days across the Atlantic from Plymouth, England. The ship was built to resemble as closely as possible the original Mayflower which brought the Pilgrims across the ocean in a voyage fourteen days longer. After exhibition in Provincetown and Plymouth, the Mayflower II was put on exhibition at New York. The skipper was Capt. Alan Villiers, author and lecturer.

- 13 Harold E. Stassen returns to London disarmament talks after denying reprimand by Dulles; his role is curbed.

- 14 Senate passes \$3.6 billion foreign aid bill, 57-25.
 - 16 Strike ties up French Line trans-Atlantic ships at start of tourist rush.
 - 17 Supreme Court restricts Congressional inquiries; frees 5 Reds in Smith Act case.
 - 18 House passes Civil Rights bill, 286 to 126.
 - 18 Federal court in Washington rules U. S. must not let Japan try Army Specialist 3/C William S. Girard.
 - 18 Senate Finance Committee opens broad investigation of U. S. fiscal policies.
 - 20 U. S. to send modern weapons including jet atomic bombers, to Korea to counter Red's build-up.
 - 20 U. N. inquiry report on Hungary blasts Russia.
 - 21 Premier Kishi of Japan, visiting Eisenhower, gets pledge U. S. will withdraw ground combat troops from Japan.
 - 21 John Diefenbaker, Conservative leader, becomes Premier of Canada.
 - 21 Adone Zoli changes mind, will accept Italian Premiership; longest Cabinet crisis ends.
 - 21 Sweeping changes in U. S. security program urged by bipartisan committee.
 - 23 3 Russian naval vessels pass through Suez Canal—first since 1917.
 - 24 Eisenhower asks Federal-state survey on returning Federal tasks to states.
 - 24 Scientists tell Eisenhower we now can produce nuclear weapons 95% free of radioactivity.
 - 25 U. S. offers 3-state reduction in armed forces to 1.7 million if Russia will do likewise.
 - 27 U. S. Steel announces \$6-a-ton price raise July 1.
 - 27 Hurricane Audrey hits Louisiana-Texas border; 275 estimated dead.
 - 29 Army sentences Col. John C. Nickerson, Jr. to forfeiture of \$1,500 pay for leaking missile secrets.
 - 30 Tito of Yugoslavia, on U. S. TV, backs Red China's version of Communist line.
 - 30 International Geophysical Year starts; to last 18 months.
- DIED: 12—Jimmy Dorsey, 53; 12—Peggy Hopkins Joyce, 62.

JULY 1957

ITCHING TO GET SOME PLACE where they weren't, footloose Americans went abroad in the most mammoth migratory herd of all time—about 2 million. 76 liners were hauling them, and hundreds of planes. In their pockets jingled \$2 billion,

itching to get spent, and the people in foreign parts were not loath to help out . . . In one foreign part there was an upheaval. Not in 2 decades had there been such a shake-up in Soviet Russia's ruling hierarchy. Out went Molotov, last of the elder Bolsheviks; out went Malenkov, protégé of Stalin; out went Kaganovich. Supreme (for the moment, at least) was Khrushchev, the ebullient, hard drinking ex-miner . . . Here at home the man who made good was corny, twangy Jimmy Dean, whose country music on the accordion was pushing him up into the \$100,000-a-year bracket on TV . . . The ludicrous gal who fell short of making good was Leona Gage who was named Miss United States over 44 other lovelies, and was showered with prizes. But she was unceremoniously uncrowned when it turned out she was not Miss, but Mrs., mother of 2 sons . . . The new word "moonlighting" was introduced to us. Despite prosperity, or because of it, the number of workers who had one job in daytime and another at night rose to 3,700,000. For example, a Chicago worker went to his shopping center to buy a suit, and the clerk who fitted him was his boss . . . Still working nights was Billy Graham, who on one of the hottest New York nights of the year drew a crowd estimated at 100,000 in Yankee Stadium. It broke all records; largest previous Yankee Stadium crowd was 88,150 for the Joe Louis-Max Baer heavyweight fight in 1935.

- 1 Mayflower II arrives in New York.
- 2 U. S. proposes 10-month moratorium on nuclear weapons tests.
- 3 Russia announces dismissal from Presidium of Malenkov, Molotov, Kaganovich, Shepilov (action taken June 29).
- 5 Biggest atomic explosion in U. S., fired in Nevada, shakes most of west.
- 6 Khrushchev charges Malenkov framed 1949 purge in Leningrad.
- 7 Holiday traffic death toll estimated at 370.
- 9 Harlem hails Althea Gibson, home from winning Wimbledon championship.
- 10 Moscow radio says Malenkov will manage power plant in East Kazakhstan. Others purged will get new jobs, unspecified.
- 11 Supreme Court affirms, 8-0, legality of letting Japan try Army Specialist 3/C William S. Girard in killing of Japanese woman.
- 12 Will of Aga Khan III by-passes his son, Aly, and names as his successor Aly's son, Prince Karim Khan, a junior at Harvard.

- 14 Rumanian Cabinet shaken up after purge of 2 top Reds called "Stalinist."
 - 16 Administration orders armed forces cut by 100,000.
 - 16 Navy jet sets record crossing U. S. in 3 hours, 23 minutes, 8.4 seconds.
 - 18 Horace Stoneham says this is Giants' last year in Polo Grounds.
 - 19 James R. Hoffa, Teamster's Union vice-president acquitted of planting spy on Senate rackets committee.
 - 20 Billy Graham crowd of 100,000 is biggest ever in Yankee Stadium.
 - 21 Holy Trinity Church in Brooklyn closed by Bishop in controversy between two rectors.
 - 23 John Kasper and six from Clinton, Tenn., convicted of contempt for segregationist mob action.
 - 24 British jet planes attack rebels in Sultanate of Muscat and Oman.
 - 25 Tunis ousts Bey, becomes a republic.
 - 25 Federal aid for school construction killed in House, 208-203.
 - 27 Anti-communist President Carlos Castillo Armas of Guatemala slain by communist palace guard.
 - 28 Quake kills 56 in Mexico, including 36 in Mexico City.
 - 29 Robert B. Anderson succeeds George M. Humphrey as Secretary of the Treasury.
 - 30 Illinois Governor refuses to free Nathan Leopold, 33 years in prison for thrill murder.
 - 31 Nazi documents reveal plan to make Duke of Windsor puppet King of conquered England.
- DIED:** 11—Aga Khan, 79; 24—Sascha Guitry, 72; 21—Kenneth Roberts, 71.

AUGUST 1957

DOG DAYS NOTE: The meat industry revealed that the average American gulped 57 hot dogs (officially known as weiners) in 1956, which was 3 more than in 1955. These Americans were still so hungry that they were expected to gobble 10.1 billion hot dogs in 1957, which, if linked together, would go around the world 30 times. Switching to a different type dog, Rover is now in clover. He may not know it, but if he dies he can leave a bequest to his owners. The Animal Insurance Company of America was licensed by New York State to write canine life insurance which will insure a pedigreed dog up to \$5,000. . . . Most of us were too busy vacationing to worry about an ominous development in the Middle East: A Communist general seized power in Syria, which made it seem probable that Soviet Russia had won a new satellite in the

midst of the vital Middle East oil region. Also, Moscow told us that it had achieved and successfully tested the ultimate weapon which could destroy us all—the ICBM (intercontinental ballistic missile) capable of popping an H-bomb some 5,000 miles. . . . Nevertheless, we here at home were boosting the efficiency of our workers with Muzak. They seemed to be happier when “Cindy, Oh Cindy” came softly to the ears of drill press operators in Burbank, Calif., and baby-powder packers in Chicago.

- 2 Senate weakens civil rights bill by voting jury trial amendment; Eisenhower angered.
- 3 Dulles, in London, presents West's plan for aerial and ground inspection of Russia, U. S., most of Europe.
- 3 Moscow announces new Khrushchev-Tito accord for “co-operation.”
- 5 New York takes 600 learners out of Police Academy to combat youth gangs that killed 22 since Jan. 1.
- 6 Mrs. Eisenhower operated on; nothing malignant.
- 7 Senate passes weakened civil rights bill, 72 to 18.
- 7 Khrushchev visits East Berlin—leaving Bulganin at home.
- 7 Soviet Col. Rudolf I. Abel indicted in Brooklyn as top spy.
- 8 Wiretaps link gangster Johnny Dio to Teamsters' James R. Hoffa. Dio pleads 5th 146 times.
- 10 France devalues franc 20% for tourists.
- 11 British capture headquarters of Oman rebels in Arabia, ending rebellion.
- 11 79 in airliner die in Quebec crash on vacation trip.
- 12 Boris Morros tells of role as 12-year spy for F.B.I. against Russian spies.
- 13 Asiatic influenza comes to New York on liner Arosa Sky, with 27 ill; one dies.
- 14 41 U. S. youths defy State Department ban and leave Moscow for visit to Red China.
- 15 Johnny Dio indicted as \$20,169 income tax evader.
- 17 Boris Morros tells House committee that Mrs. Martha Dodd Stern was a Soviet agent. (Sterns flee to Czechoslovakia.)
- 18 Pro-Soviet army officers execute coup in Syria, taking over power.

N. Y. GIANTS MOVE

- Aug. 19 The New York Giants baseball team would shift their home base to San Francisco in 1958 after 74 years in New York, Horace Stoneham, Giants president; an-

nounced. Attendance at the Polo Grounds slipped from 1,600,000 in 1947 to 629,000 in 1956. Pay television on the Pacific Coast was expected to boost profits.

- 20 Air Force balloonist sets altitude record, ascending more than 100,000 feet—about 19 miles.
- 20 James R. Hoffa, on Senate witness stand, says he got \$120,000 in loans without security.
- 21 U. S. offers to halt nuclear weapons tests for 2 years.
- 22 State Department, reversing itself, lets 24 news correspondents go to Red China.
- 26 Red China balks at admitting American news correspondents.
- 26 Moscow claims successful test of intercontinental ballistic missile.
- 26 Trial of Army Specialist 3/c William S. Girard opens in Japanese court in Makbashi.
- 27 Wisconsin vote upset elects William Proxmire, Dem., to Senate seat McCarthy held.
- 29 Sen. Strom Thurmond, Dem., S. C., completes speech of 24 hours, 27 minutes, setting filibuster record.
- 30 Congress approves \$3.4 billion foreign aid; adjourns.

MALAYA NEW NATION

- Aug. 31 The Federation of Malaya came into existence as the newest free nation in the world. British rule ceased, but Malaya remained a member of the British Commonwealth. Seventeen days later it was admitted as the eighty-second member of the United Nations. The Malayan states were brought under British rule in the late 19th century as a result of commercial and political penetration. They bear names strange to Occidental tongues—Trengganu, Kelantan, Negri Sembilan, etc. Britain and Malaya announced a defense alliance permitting British troops to be stationed there as protection against possible Chinese aggression.

DIED: 4—Walter F. George, 79; 7—Oliver Hardy, 65.

SEPTEMBER 1957

OMINOUS ECHOES of the Civil War days nearly a century ago filled the land. U. S. Army paratroopers with fixed bayonets moved into Little Rock, Ark., to

suppress a mob trying to block the entry of 9 Negro pupils into a formerly all-white high school of 2,000. Arkansas was "occupied territory," said its enraged Gov. Faubus. . . . In New York, Evangelist Billy Graham wound up his marathon 16-week preaching stint in which 2 million persons came to hear him. But his staff didn't see eye-to-eye with the New York City police about the size of the crowd at the final open-air rally in Times Square. Staff said 120,000 attended. Police said 75,000. . . . Crowds, alas, also flocked to a new-type horror movie called "I Was a Teenage Werewolf," which took in a monstrous \$1,700,000. . . . And the women were flocking to the beauty parlors by the millions to get their hair tinted practically any color it wasn't already—colors such as Golden Apricot, Sparkling Sherry, Fire Silver and Champagne Beige. Estimated tinted women: 1 out of 3. . . . Among the happiest people in the sports-goods business as the summer ended were the water-ski makers, for they were experiencing boom sales at the rate of 250,000 pairs worth \$6,500,000, half again as many as in 1956; and to make the skis go, people were buying outboard boats at the rate of \$18,000,000 worth. . . . Not so happy were the stock market investors, for the total of stock values was slipping, slipping—a billion today, couple billion tomorrow.

- 1 Final meeting of Billy Graham crusade packs Times Square, N. Y.
- 3 Holiday traffic accidents kill 375.
- 3 Gov. Orval Faubus of Arkansas blocks court-ordered school racial integration with National Guard.
- 3 Congress enacts bill restricting use of FBI files in Federal courts to records found relevant by judge.
- 4 First Russian jet airliner lands in U. S.
- 6 U. N. disarmament talks in London recess indefinitely in deadlock after 5½ months.
- 7 Eisenhower vetoes bills to increase salaries of postal employees and Civil Service employees.
- 9 U. S. planes fly emergency shipment of arms into Jordan.
- 10 Nashville, Tenn., police arrest John Kasper and other racist agitators after the dynamiting of a new school.
- 11 Pope Pius tells Catholic bishops to keep watch on morals of radio and TV.
- 12 Syria announces its army is united with Egypt's under Egyptian supreme command.
- 15 Adenauer wins West German election; biggest free vote in German history.
- 16 Army seizes Thailand in bloodless coup.
- 17 Malaya admitted as 82nd U. N. member as 12th General Assembly opens.

- 18 Johns Hopkins University scientist reports vaccine achieved against 1 of many viruses causing common cold.
 - 19 Defense Dept. orders 2nd cut of 100,000 in armed services.
 - 20 Federal court enjoins Gov. Faubus in Little Rock; he withdraws National Guard from school.
 - 21 Air Force Capt. George H. French sentenced to life for trying to sell secrets to Russians.
 - 23 Mob in Little Rock beats Negro reporters as 9 Negro pupils are spirited into high school.
 - 24 Eisenhower sends Army troops to Little Rock to quell mob and protect school integration.
 - 24 U. S. Coast Guard cutters complete trip around North America through Northwest Passage.
 - 25 U. S. Air Force fails in second attempt to test-fire intercontinental ballistic missile, the Atlas.
 - 28 Eisenhower accuses Faubus of encouraging Little Rock mob to block school integration.
 - 29 N. Y. Giants lose last game in Polo Grounds to Pittsburgh Pirates, 9 to 1.
 - 29 Pope Pius XII tells women they must subordinate themselves to men in marriage.
 - 30 Cabinet falls in France on Algeria issue; Premier Bourges-Maunoury resigns.
- DIED:** 4—Herbert Pulitzer, 61; 20—Jean Sibelius, 91; 21—King Haakon VII, 85; 24—Leo (Lindy) Lindermann, 69.

OCTOBER 1957

WE GASPED. It couldn't be. But there it was, some 500 miles up in the sky. You could see it. High-powered radio stations could hear the beep-beep-beep of its radio transmitter. Russia's baby moon named Sputnik kept whizzing around and around the world, making the trip in a neat hour and a half. . . . Our alert toymakers did some whizzing, too. They came up with a miniature launcher which would shoot a little ball 75 feet into space. . . . But our second thoughts about Sputnik were grim. Maybe that Russian launching rocket could be turned in our direction with an H-bomb warhead.

- 1 International Atomic Energy Agency (for peaceful atom use) opens first conference in Vienna; 60 nations attend.
- 1 Japan wins two-year seat in U. N. Security Council as Russia's candidate, Czechoslovakia, is defeated.
- 2 New York City announces it has Asian flu epidemic.

- 3-4 Polish students fight police in Warsaw in protest against closing their weekly paper.
- 4 Russians launch first artificial satellite, circling globe at 18,000 miles an hour 560 miles up.
- 4 Teamsters union elects James R. Hoffa president by 3 to 1, despite threat of expulsion from AFL-CIO.
- 6 Russian earth-satellite sighted first time in U. S. at University of Alaska.
- 7 Russia announces test of new H-bomb designed as warhead for missiles.
- 7 Gov. Faubus charges Federal troops with "invading privacy of girls' dressing rooms" at Little Rock school.
- 9 Eisenhower voices concern on U. S. missiles program, but not on Russia's satellite.
- 10 U. S. warns Russia that it will defend Turkey if attacked.
- 12 Queen Elizabeth II and Prince Phillip arrive in Canada for four-day visit. (They visit the United States—Williamsburg, Washington and New York—Oct. 16-22.)
- 13 Egypt announces landing of armed forces in Syria to strengthen it against possible attack.
- 14 Federal judge in Washington temporarily bars Hoffa from taking Teamsters union presidency.
- 14 Nobel peace prize for 1957 goes to Lester B. Pearson, former Canadian Secretary for External Affairs.
- 15 Yugoslavia extends diplomatic recognition to East Germany, first non-satellite to do so.
- 16 Dulles says Russia faces U. S. blow at its territory if it attacks Turkey.
- 17 Nobel literature prize for 1957 goes to Albert Camus, French author.
- 19 West German government severs diplomatic relations with Yugoslavia in retaliation for its recognition of East Germany.
- 20 King Saud of Saudi Arabia offers to mediate Mid-East crisis involving Turkey and Syria. (Turkey later accepted mediation, but Syria rejected it.)
- 21 Supreme Court kills Virginia's "pupil placement" law to avoid school integration.
- 21 Stocks lose \$5.6 billion in a day for sharpest break in 2 years.

U. S. SENDS UP ROCKETS

- 21 In a stepped-up missile-rocket testing program, the Air Force sent a rocket higher than any object ever hurled by man. First calculations indicated more than 2,000 miles. It was carried up to about 100,000 feet by a balloon over Eniwetok Atoll in the Pacific, then fired, in Project Farside. On Oct. 22 the Army fired its Jupiter missile to a distance of 1,200 miles. On Oct. 23 the Navy sent its Vanguard missile to an altitude of 109 miles. On Oct. 24, the Air Force fired its intermediate range ballistic missile, Thor, to a distance estimated at 1,500 miles.
- 22 Anti-American bombings in Saigon, Vietnam, injure 13 U. S. service men.
- 23 Herbert Brownell, Jr., resigns as Attorney General; he will be succeeded by Deputy Attorney General William P. Rogers.
- 23 Stocks recover \$8 billion in biggest rise since Nov. 14, 1929.
- 23-25 Prime Minister Harold Macmillan of Britain confers with President Eisenhower in Washington.
- 24 Nobel Prize in Medicine for 1957 awarded to Dr. Daniel Bovet, Swiss-born naturalized Italian.
- 24 AFL-CIO suspends International Brotherhood of Teamsters for "corrupt influences."
- 25 Albert Anastasia, underworld king who beat 5 murder raps, is murdered in N. Y. C. barbershop.
- 25 Russian Col. Rudolf Ivanovich Abel found guilty in Brooklyn Federal court of spying in U. S.
- 26 Marshal Georgi Zhukov replaced by Marshal Malinovsky as Soviet Defense Minister.

DIED: 22—Christian Dior, 52.

HEADLINE STORIES OF 1957

LABOR

AT THE BEGINNING of 1957 the Senate established a Select Committee on Improper Activities in the Labor or Management Field, consisting of 4 Democrats and 4 Republicans. The chairman was Sen. John L. McClellan, D., Ark. The chief counsel was Robert F. Kennedy.

As the inquiry continued through the spring, summer and autumn, three indi-

viduals in the labor movement emerged prominently. They were:

Dave Beck, president of the International Brotherhood of Teamsters.

James R. Hoffa, vice-president of the Teamsters and its Mid-West boss, who hoped to succeed Beck as president.

Johnny Dio (real name Dioguardi), a

twice-convicted labor extortionist, operating chiefly in New York City.

Beck

The broad pattern developed by the Senate investigators in the case of the Teamsters was one of co-operation between the underworld and Teamsters officials. For example, evidence was introduced that the union forced closing of establishments that refused to use the pinball machines controlled by the union-underworld combine. The Teamsters was called the largest union in the nation, although there was some dispute as to size between it and the United Automobile Workers.

When Dave Beck took the witness stand before the Senate committee he was asked what happened to some \$320,000 absent from the treasury of the Teamsters in Seattle, the union's headquarters. Did Beck take \$85,000 to pay personal bills? Did Beck take \$36,000 to pay personal loans? Etc., etc.

Beck, on the Senate witness stand, "took the 5th" 209 times. That is, he invoked the Fifth Amendment to assert his right of avoiding possible self-incrimination. He refused to answer the questions about what became of the union's \$320,000.

As a result of this, the AFL-CIO suspended Beck as a vice-president. That action did not affect Beck's presidency of the Teamsters. But the AFL-CIO held over the Teamsters the threat that this union might be expelled from the over-all organization unless it cleaned house.

Trouble accumulated for Beck. He was arrested on charges of evading \$56,419 in Federal income taxes.

Beck was expelled from the AFL-CIO Executive Council in May. Under pressure, he reversed his previously announced decision to run again for the Teamsters presidency in September. He said he would not be a candidate for re-election.

Hoffa

With Beck out of the running, James R. Hoffa aspired to the Teamsters presidency.

The Senate investigating committee turned its attention to Hoffa. A New York lawyer, John Cye Cheasty, told the committee that Hoffa had hired him to get onto the committee staff and pipe information out to him regarding the committee's investigatory activities. Hoffa was arrested for bribery and was subsequently acquitted.

Sen. McClellan said that Hoffa was on his way to getting "a stranglehold over the Port of New York," through a tie-up with the International Longshoremen's As-

sociation. Hoffa gave partial confirmation, saying he hoped for an all-embracing federation of American transport unions—land, sea and air; his idea was to be in a position to call a strike against all forms of transportation.

Testimony of a former Teamster president in the New York area indicated that Hoffa thought up the idea of creating "paper" locals of the union in New York—locals without any members—in order to swing an election in order to put his man in control. Each local had 6 votes for the union area presidency and 7 were created. The Hoffa man, John O'Rourke, won in 1956.

He did not plead the Fifth Amendment, but Senators criticized him for faulty memory. The committee counsel, Robert F. Kennedy, read the police records of men he said were working for Hoffa in his Detroit headquarters. The list of convictions included crimes such as armed robbery, assault and bookmaking.

Evidence was introduced that Hoffa borrowed from 1952 to 1956 approximately \$120,000 for his outside business activities, much of it from locals of the Teamsters union and from individuals with police records. Usually the transactions were in cash, without notes, interest or collateral.

The main current of the Senate questioning concerned Hoffa's association with Johnny Dio, a New York gangster. Wire-tapped tape recordings of telephone conversations indicated that there was a firm alliance between Hoffa and Dio. At the time, Dio was in prison awaiting sentence on a shake-down conspiracy. He also was under indictment in connection with the blinding of Victor Riesel, labor columnist, by throwing acid in his face.

Dio

At the Senate inquiry, a small Brooklyn machine-shop owner testified that Johnny Dio had used threats against his wife and children to shake him down for \$1,400, demanding that amount for giving him an easy union contract for his 8 employees.

A small manufacturer in New Rochelle, N. Y., told how he had paid Dio \$1,800 in a year to keep his plant from being unionized.

Dio, on the stand before the Senators, invoked the Fifth Amendment 146 times to avoid answering questions on grounds of possible self-incrimination. However, the Senate investigators played a tape recording, wire-tapped by court permission, of a gangland "business conference" conducted over the long-distance phone. The recording, made in 1955, indicated that Dio was part of the labor union network of Hoffa. It bolstered the contention of the

committee that Dio connived in setting up 7 "paper locals" (spurious union units) which helped Hoffa rig a union election in New York.

Feb. 26 Senate opens inquiry into labor-management rackets.

Mar. 13 FBI arrests on bribery charge James R. Hoffa.

18 4 high officers of Teamsters union indicted for contempt of Senate for silence at inquiry.

26 Dave Beck, Teamsters union president, invokes Fifth Amendment at Senate inquiry.

29 Beck suspended by AFL-CIO Executive Council.

May 2 Dave Beck indicted for evading \$56,419 income taxes in 1950.

20 AFL-CIO Executive Council expels Beck.

July 19 James R. Hoffa acquitted of planting spy on Senate rackets committee.

Aug. 8 Wire-taps link gangster Johnny Dio to Teamsters' Hoffa.

15 Dio indicted as \$20,169 income tax evader.

20 Hoffa on stand in Senate inquiry.

28 Dave Beck indicted 2nd time (1st time May 2) as income tax evader. Total taxes alleged evaded 1950-53: approximately \$240,000.

Sept. 25 AFL-CIO executive council gives Teamsters union 30 days to get rid of corrupt leadership influences or face possible expulsion.

25 Hoffa indicted on 5 counts of perjury in New York in connection with testimony he gave in April on alleged wire-tapping in Detroit headquarters.

30 Teamsters convention begins at Miami Beach.

Oct. 4 Teamsters elect Hoffa president by 3-to-1 vote despite threat of expulsion from AFL-CIO.

14 Federal judge in Washington temporarily bars Hoffa from assuming Teamsters presidency.

RUSSIA

ONE DAY AFTER Joseph Stalin died in 1953, the new Premier was announced—Georgi M. Malenkov. There appeared to be 4 men at the top who were potential rivals for power. The other 3 were V. M. Molotov, Foreign Minister, L. P. Beria, head of the secret police, and Marshal Nikolai Bulganin.

Beria was purged and executed within the year, leaving 3.

Almost 2 years after Stalin's death, Malenkov resigned as Premier, professing inadequacy for the post. He was replaced by Bulganin. But there was evidence of the growing power of Nikita S. Khrushchev, who became First Secretary of the Communist Party.

In February, 1956, at the twentieth Congress of the Communist Party, Soviet Union—the first since the death of Stalin—Khrushchev denounced Stalin as a murderer. He decried the "cult of personality"—meaning dictatorship as practiced by Stalin—and said that the Soviet Union was returning to Lenin's principle of "collective leadership."

In the summer of 1957, 3 men regarded as among the most powerful in the Soviet Union were dropped from party and government leadership. They were Molotov, Malenkov and L. M. Kaganovich. The Moscow announcement said they were to receive relatively minor posts. Also dismissed was Dmitri T. Shepilov, who briefly held the post of Foreign Minister.

A party communique accused the 3 most prominent purged men of forming an "anti-party group." The communique went on to say that these men, "now laid bare and fully exposed, have been offering constant opposition, direct or indirect, to this course approved by the twentieth Congress of the CPSU." They were accused of having "manifested a conservative and narrow-minded attitude" and of having "resorted to methods of intrigue and formed a collusion against the Central Committee."

Observers of the Russian scene believed that this newest political purge represented a victory for Khrushchev. They believed that Molotov, Malenkov and Kaganovich had represented in the inner circle the opposition to Khrushchev. In particular, it was believed that they had opposed Khrushchev's policy of decentralizing the Soviet economic set-up so that it would not be ruled in detail from Moscow, but would be divided into regional organizations. Khrushchev's desire to get along more amicably with Marshal Tito of Yugoslavia was regarded as another factor.

1953

Mar. 6 Stalin dies.

7 Malenkov named Premier.

July 10 Beria ousted; executed Dec. 23.

1955

Feb. 8 Malenkov resigns as Premier. Bulganin succeeds him.

1956

Feb. 24 Khrushchev denounces Stalin.
(Speech became known Mar. 20.)

1957

June 29 Communist party's Central Committee ousts from power Molotov, Malenkov and Kaganovich. (Decision revealed July 3.)

ZHUKOV RELIEVED

Was Zhukov upgraded or downgraded? That was the big question throughout the world, on Oct. 26, when the Presidium announced that Georgi K. Zhukov was relieved as Minister of Defense and replaced by Rodion Y. Malinovsky. By the time we went to press, the answer to this question was still unknown.

The shuffling and elimination of Presidium members of the U.S.S.R. is as follows:

Fates of Presidium Members

Number of members since inception	51
Present membership	15
Ousters, demotions	17
Executed	6
Natural deaths	4
Natural deaths: quite questionable	3
Disappearances	3
Assassinated	2
Suicide	1

The life of a Communist leader is, indeed, perilous. On the basis of the score listed before, one wonders whether it is again the story of the ten little indians.

When you read these comments, Zhukov may be the Premier of the U.S.S.R. or on the way to obscurity.

It is not the function or license of an Almanac to speculate on whether Zhukov or other Russian leaders are going up or down. The only thing we are sure of is that the "Red Moon" went up.

RED MOON

(We invite you to read "Man Invades Space" by Willy Ley on page 22.)

SOVIET RUSSIA successfully launched on Oct. 4, 1957, the first earth-satellite, or "baby moon." It whizzed around the globe at 18,000 miles an hour at altitudes from 155-560 miles. Moscow said it took 1 hour, 36 minutes, 2 seconds to circle the earth.

The United States had announced that it intended to try launching a tiny experimental satellite in the autumn of 1957, and a larger version in the spring of 1958.

The world's first man-made moon was described by the Russians as a ball 23 inches in diameter weighing 184 pounds. This was about 8 times heavier than the "moon" the United States was preparing.

The Russians predicted that the earth-satellite would continue its globe-girdling course at least a year.

In the Russian earth-satellite were two radio transmitters which sent signals to the earth. The signals were promptly picked up by the Radio Corporation of America at its powerful listening post at Riverhead, L. I., and identified as 20.005 and 40.002 megacycles.

Russia's moon could be visible only when it reflected the light of the sun at dawn or dusk. Sighting of it was reported from virtually every inhabited part of the earth.

The artificial satellite gave scientists two important pieces of hitherto unavailable information: (1) On the exact shape of the earth, which is known to flatten toward the poles; and (2) The density of the upper atmosphere.

The military implications of the Soviet victory in the so-called moon race were a matter of speculation. The Russians must

have brought to a high stage the creation of rockets. If these rockets could shoot the little ball into space with such precision, it seemed that the same Russian rockets might be able to shoot an intercontinental ballistic missile with a nuclear warhead.

The Russians called their earth-satellite Sputnik.

It turned out that Sputnik was accompanied in its globe-circling course by two additional fellow-travellers. The final part of the three-stage rocket that lofted Sputnik also whizzed around the world as did the protective cone that shielded Sputnik as it was shot through the atmosphere.

Widespread concern was expressed in the U. S. about the fact that the Soviet Union had beaten us in putting up an earth-satellite. Our satellite program was called Project Vanguard. Our proposed "baby moon" would weigh only about 22 pounds as compared to the Russians' 184 pounds. The target date to shoot it into the sky was March, 1958.

President Eisenhower said on Oct. 9 that he saw no reason for "one iota" of increased concern over our national security as the result of Russia's success.

Partly as the result of Sputnik, Prime Minister Harold Macmillan of Britain and President Eisenhower decided at their White House conferences (Oct. 23-25) to stimulate greater scientific cooperation between their two nations. They set up two sub-committees, one to "make recommendations in the field of military defense, particularly those problems dealing with missiles and rocketry," and another to make recommendations "in the field of nuclear relationship and cooperation."

Introduction To Operation News

The Importance of Reading a Newspaper

A NEWSPAPER IS IN A SENSE our contact with the world. News is no longer centered in our own Main Street. Something happens in the remotest part of the world and it flares up in our own cozy living room. For instance:

A governor of a state defies the Federal courts and creates a national crisis. A foreign government shoots an artificial satellite into space and it figuratively lands in everybody's backyard.

In a tense world, the impact of news events is strong. Many of us are frightened, but not for long. After the first shock, most Americans get stirred up, ask questions and speak their minds. This is democracy in action.

Informed citizens are the strength of a nation. Only an informed people can make the necessary right decisions. Time and time again the people have demonstrated that they were better qualified to meet an issue and make a decision than their government.

Take Sputnik, for example. The first reaction was a mixture of fear and frustration. The U.S. was suddenly placed in a position of inferiority to the U.S.S.R. in scientific achievement. Our government was caught flat-footed. Why? Didn't our government have advance information that Russia might launch a satellite? Were our own scientists unprepared to undertake the launching of our own satellite? The answer is apparently No to both questions. High government officials did have advance notice—according to reliable reports, which have not been denied, to my knowledge. They knew as early as March, 1957 that the Russians would launch a satellite about the time it happened. While they knew and did nothing about it, American scientists were pleading with our Department of Defense to rush the launching of our satellite, only to have their pleas rejected. Also, somewhere along the line, some other government official decided we would gain a propaganda advantage with the world if we separated the satellite from any military connection and made it just a nice scientific project. It seems we lost the race to Russia because government officials who were required to make the decisions completely underestimated the whole value of launching a satellite in space.

Besides the advent of Sputnik itself, what put the American people on the alert was the way it was handled by the newspapers. To them it was not just science fiction come true. They evaluated Sputnik correctly and intelligently—they knew its importance and told their readers the whole story honestly. They hit hard and pulled no punches.

What has happened since? Government officials seem to be reversing themselves. They are talking about stepping up our missiles program. The role of our scientists will probably be more important.

As a nation we should develop a healthy respect for our publishers. They and our educators, more than other groups, try to do the job of keeping us informed. If they are not successful, it will be because people do not give them proper recognition and support. One thing should be abundantly clear to us as a great nation: Education is fundamental to a position of power and responsibility.

At the risk of going beyond my role as editor to become an advocate, I would like to make a proposal for providing greater educational opportunities for our children. The cost of education is mounting and the greatest burden rests with the family. Putting a youngster through college costs from \$1,000 to \$2,500 a year. With a number of children in the family, the cost becomes forbidding. Why shouldn't the government allow the family full income tax deduction for the cost of a college education? Where a family's income is insufficient to meet the cost, why shouldn't the government subsidize a college education on a loan basis?

Your support of the newspapers, which are a great force for keeping the country informed, is something you can and should do without too much effort. Simply make the reading of newspapers an important habit for the entire family. Merely glancing at headlines is not adequate for keeping informed—it needs a little more time and effort.

To help you get more out of your newspaper reading, we have designed and developed "Operation News." This section provides you with more background on important news stories, at least, more background than the space of a newspaper generally permits.

We strongly urge you to use our "Operation News" section: check the table of contents on the next page. Here we deal with the most vital questions you will be reading about in the newspapers for many moons to come. We suggest you keep the INFORMATION PLEASE ALMANAC handy when you are reading a newspaper. You will definitely find it helpful.

DAN GOLENPAUL, Editor

OPERATION NEWS

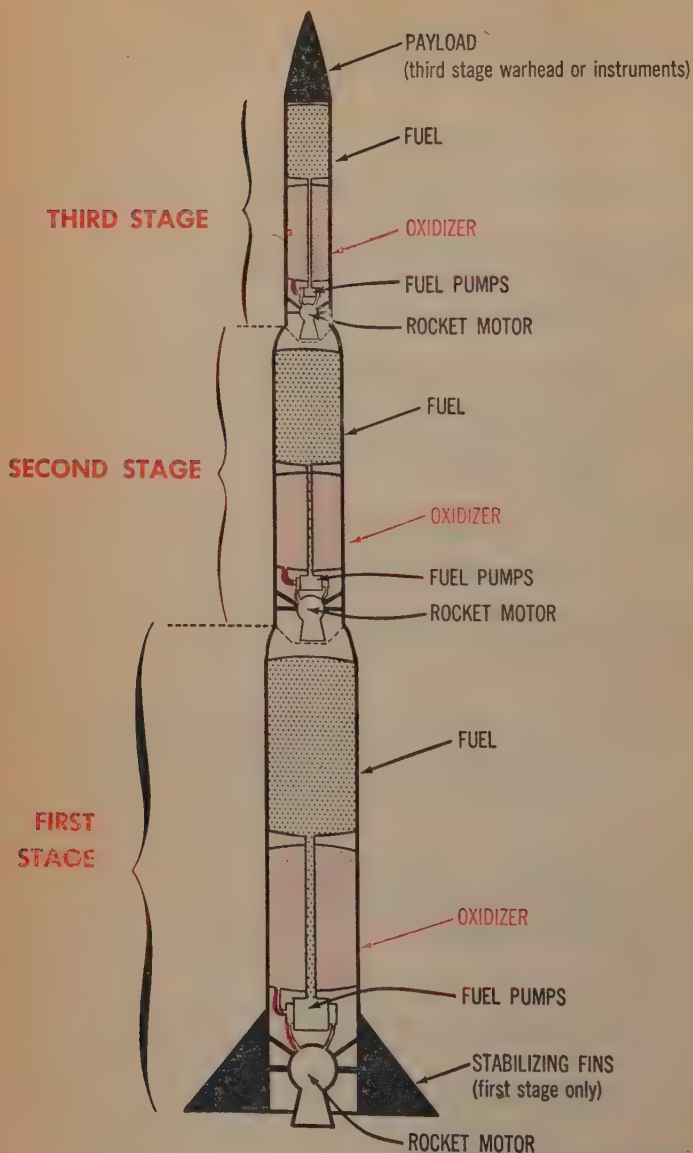
Past-Present-Future

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THREE STAGE LIQUID FUEL ROCKET

STAGES ARE NUMBERED IN THE SEQUENCE OF BURNING



PICTOGRAPH CORPORATION

MAN INVADES SPACE

and

The International Geophysical Year

By

WILLY LEY

IT WAS NOON in Asia, early morning in Europe and late evening in the Western Hemisphere on October 4, 1957, when short-wave sets, for the first time in history, received man-made signals from space. The planet Earth had just acquired another satellite; more precisely, as it turned out later, three of them. The Russians had succeeded in placing the first artificial satellite into an orbit around the earth. The third stage of the three-stage rocket which had thrown the satellite into the orbit was in the orbit too (as was to be expected) and the rocket's nose cone, which had protected the satellite during the ascent through the atmosphere, was also orbiting.

The radio signals, of course, came only from the satellite proper and with their aid the orbital period—which means the time required for completing one circuit around the earth—could be established as being 96 minutes and a few seconds. The orbital period of any satellite, man-made or natural, depends on one factor only, namely its distance from the ground. In other words a wad of newspaper and a locomotive would have the same orbital period if they were orbiting at the same distance from the ground; size, weight or shape are unimportant in *empty* space.

The distance of the satellite was computed at 560 miles. It must be remembered at this point that the Russians, like all Europe (except England) use the metric system and 559.23 miles equal 900 kilometers, a figure which looks as if it had been planned.

The Russian name for their satellite quickly became a household word in the abbreviated form of "Sputnik." The Russians themselves cannot use just this one word alone because it would be too indefinite. It is a regular Russian noun, compounded of *s* (meaning "with"), *put* (meaning "road") and the suffix *nik* which can refer to either a person or an object so that the whole word means "traveling companion." The Russians have to say whose companion it is, hence their term is

Sputnik Zemli, "traveling companion of earth," since *Zemlya* is the Russian word for "earth."

After the news had been spread via radio, television and newspapers most Americans, from senators to odd-job laborers, had the same question in mind. Just what had happened?

Well, this is the International Geophysical Year and among the countless number of research projects two satellite projects had been announced. One was the American Project Vanguard, announced by the White House on July 29, 1955. The other was a Russian satellite project, which was not formally announced by the Russian government the way ours was. A number of months after the American announcement the Russian delegates to IGY conferences simply mentioned their own satellite project. In fact, on several occasions Russian scientists broadly hinted that there would be a "big celebration" of the hundredth anniversary of the birth of the Russian rocket pioneer, Konstantin Eduardovitch Ziolkovsky. This anniversary fell on September 17, 1957. Since Ziolkovsky had been a rocket pioneer the "big celebration" could only be a spectacular rocket shot. An Air Force document released in June, 1957 even stated that a Russian satellite shot would be a likely celebration of Ziolkovsky's birthday and the National Security Council received information about a forthcoming Russian satellite launching in March or April 1957.

American scientists were somewhat annoyed that the firing had not been announced beforehand and said that the secret firing violated the spirit of the International Geophysical Year. The Russian reply to this criticism was that they were not sure that their shot would be successful but that they made their announcement within two hours of the firing, just as soon as they were certain that *Sputnik Zemli* had settled in its orbit.

After the question "what happened" came the second question: "What keeps it up?"

How an Orbit Is Formed

To visualize the way in which an artificial satellite orbits around the earth, it is best to employ a gradual approach by looking at a few rocket trajectories. The German V-2 rocket of World War II covered a horizontal distance of 200 miles. The highest altitude reached by such a rocket along its trajectory was not quite 60 miles at the halfway point. This is a rather curved trajectory. A rocket covering a horizontal distance of, say, 600 miles, might ascend to only 100 miles altitude at the halfway point. A still faster rocket might cover a horizontal distance of 2,000 miles but ascend only 200 miles at the halfway point. It can clearly be seen that the curves grow shallower and shallower the longer the range. At this point we must remember that the surface of the earth is curved too. Therefore there must be a velocity where the curve of the rocket's trajectory becomes as shallow as the curvature of the ground below. This rocket would not return to the ground, provided, of course, that it attains such a shallow trajectory outside the earth's atmosphere. Since the rocket, at that point, will travel on momentum only, there must be nothing which would reduce its momentum, such as air resistance. If nothing is in the way, the trajectory will become a closed curve. And becoming a closed curve, for example a circle, it ceases to be a trajectory. It now acquires a new name—the astronomical designation of orbit.

To stay in an orbit around the earth, a rocket must have a velocity of about $4\frac{1}{2}$ miles per second. When it swings around the earth at that rate, traveling on momentum, the centrifugal force produced is just right to counterbalance the gravitational attraction of the earth.

It is actually the gravitational attraction of the earth which causes the closed orbit. If, as many people used to think, the satellite were "beyond the pull of gravity," it would simply sail off into space along a straight line.

An orbit around the earth can be established anywhere, provided only that it is above the atmosphere. The shape of the orbit will always be elliptical but it is possible in some cases that the ellipse is so "round," or so nearly circular, that the term "circular orbit" can be used. The following discussion has circular or very nearly circular orbits in mind; elliptical orbits will be discussed later.

For all circular orbits, the rule holds true that the artificial satellite, or rather the rocket which carries it and deposits it in the orbit, must move the faster the closer it is to the ground. At sea level, the

speed required would be an even 5 miles per second but, of course, a sea level experiment is impossible because of air resistance. For a distance of about 250 miles the "orbital velocity" has to be about 4.6 miles per second; for a distance of 1,075 miles it is down to 4.4 miles per second. This is so because the pull of the earth's gravity becomes less, as the distance becomes greater. Hence less velocity is needed to counterbalance it and to keep it in the orbit.

On the other hand, it takes more fuel to climb to a farther orbit so that, in terms of fuel expenditure, a "low" orbit is cheaper. In an orbit 240,000 miles from the earth—that is, the orbit of our real moon—the orbital velocity needed is only 0.6 miles per second. But it needs no calculation to realize that it would require more fuel to establish an orbit at such a distance than at a distance of a few hundred miles.

Here is a short table of a few circular orbits:

Distance from ground (miles)	Orbital period (minutes)	Orbital velocity (miles per sec.)
346	96	4.69
470	105	4.41
1,075	120	4.39
3,200	210	3.58
4,000	240	3.47
7,700	420	2.90
22,300	1,440	1.90

The last orbit in this table is called the 24-hour orbit and if an artificial satellite were put into this orbit over the equator it would seem to stand still over one point on the ground since its orbital period and the rotation of the earth coincide.

The problem of producing an artificial satellite is, in essence, rather simple. It must be lifted above the atmosphere and be provided with the necessary (lateral) velocity to stay in an orbit at the altitude to which it has been lifted.

Now what would happen if it had a higher velocity than the proper velocity for the altitude to which it has been lifted? The answer is that it would recede from earth, lose velocity in doing so and would approach earth again; in short its orbit would not be circular, but would be elliptical.

An artificial satellite in a circular orbit outside the earth's atmosphere would be a permanent satellite. A satellite in an elliptical orbit can be a permanent satellite too, provided the whole length of the ellipse is outside the atmosphere. But if

the ellipse, at the point closest to the ground, is still inside the atmosphere the satellite will be a temporary satellite as

we'll see. Both the Russian Sputnik and the planned American Vanguard satellites are, or will be, in such temporary orbits.

How to Shoot for an Orbit

But before we discuss what the orbit is like and what will happen to the satellites we have to look at the problem of how they are brought to the orbit.

The velocity which a rocket can attain depends on two factors, which are technically known as the "exhaust velocity" and the "mass ratio." The term, exhaust velocity, refers to the velocity of the exhaust blast of the rocket motor, measured relative to the rocket. One of the most customary liquid rocket fuels, ethyl alcohol burned with liquid oxygen, produces an exhaust velocity of 7,000 feet per second. This exhaust velocity depends on the energy content of the rocket fuel and most fuels now in use have more or less the same exhaust velocity. The term, mass-ratio, refers to the ratio of the weights of the rocket when fueled and when empty (structure *plus* payload). This ratio is usually between 3 to 1 and 4 to 1, the fully fueled rocket weighing three to four times as much as its empty weight plus payload. To get a very high rocket velocity, both the exhaust velocity and the mass-ratio should be as high as possible. In practice, however, there are limits which have just about been reached by now. The exhaust velocity of the well known fuels

cannot be increased and the development of entirely new fuels takes time.

The mass-ratio can be increased a little as rocket engineers become more practiced and parts grow lighter but nobody believes that this can be pushed very far. However, there is a fairly easy way out: namely the so-called step rocket. If one rocket is carried as the payload of another rocket, this upper rocket, which is called the "upper stage" can reach velocities which no single rocket could attain. The second rocket will reach a velocity as high as about 1.5 miles per second without burning an ounce of its own fuel, simply because that is the velocity to which it is pushed by the first rocket. Then the second rocket, using its own fuel, can accelerate to 3 miles per second. And if there is a third rocket sitting on top of the second this third rocket will start out with 3 miles per second and add whatever velocity it is capable of developing.

With presently known fuels it needs such a three-step rocket to lift a satellite into an orbit. The Russians seem to have used a two-step long-range missile from which they removed the warhead and replaced it with a third stage built for this purpose. The third stage carried the satellite.

Project Vanguard

When the Russians succeeded in launching their satellite, Americans wondered why this country's satellite launching had been delayed.

Project Vanguard, in the beginning, was not Project Vanguard, but was an idea of American rocket scientists who said they could produce a satellite by combining various existing military rockets. After having been turned down once or twice, the idea was finally accepted and discussed under the name of Project Orbiter which was to be a joint Army-Navy venture, with the Army supplying the rockets and the Navy carrying it to the equator to be fired from shipboard. This was in 1954 and 1955.

Meanwhile, Project Vanguard had been suggested as a part of the International Geophysical Year and the Administration felt that an entirely peaceful project would have better propaganda value than a military shot. Therefore Project Orbiter was

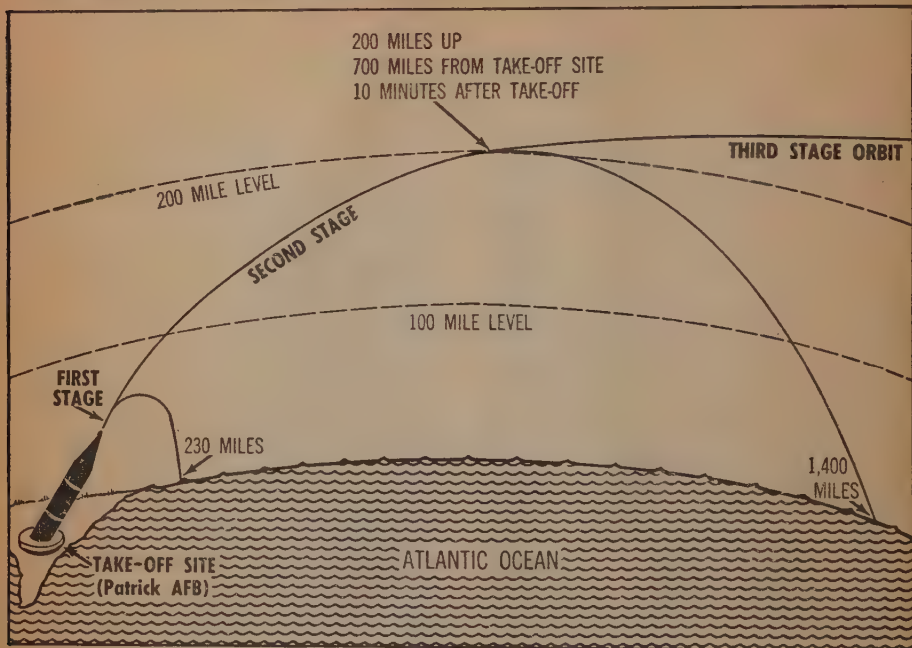
discontinued and Project Vanguard announced instead. Vanguard was to use a rocket especially built for this purpose only.

The first stage rocket of Vanguard was assigned to the Martin Company in Baltimore, Md. and the rocket motor for it to the General Electric Co. in Schenectady, N. Y. The second stage was handed to Aerojet-General in Azusa, Calif., and the third stage (a solid fuel rocket) to Hercules Powder. The Naval Research Laboratory was to provide the over-all coordination while the shooting was to take place from Patrick Air Force Base in Florida.

Project Orbiter, if it had been permitted to go on, would have been ready during 1956.

Project Vanguard is also going to use a three-step rocket but here the whole rocket was built for the purpose. A satel-

TAKE-OFF DIAGRAM FOR VANGUARD SATELLITE



lite-carrying rocket can be designed in two ways, which may be called either "from the nose down" or "from the tail up." In the first case, the scientists decide what instruments they want to send into space and find out how much they weigh and how much room they require. That way you get a "payload weight"—21.5 pounds in the case of the Vanguard satellite—and then the three-step rocket capable of carrying this weight into an orbit can be designed. The Vanguard rocket, designed for a rather low payload weight, is a tall rocket (72 feet) but it is not a big rocket, weighing about one ton less than the war-time German V-2.

The Russians followed the opposite procedure of designing from the tail up. They picked the largest reliable rocket missile on hand and then saw how much payload this missile could carry if it was equipped with a third stage and used as a satellite carrier. The weight of Sputnik turned out to be surprisingly high, although the figures given for it by various sources do not agree. The figure of 176 pounds seems to be the most likely if only for the reason that this, in the metric system, would be an even 80 kilograms.

The take-off procedure planned for Van-

guard is the following: the three-step rocket will lift vertically from its firing table at Patrick Air Force Base in Florida. Vertical take-off is the preferred method because the rocket, when it still moves slowly in the first few seconds of its flight, is easiest to stabilize in a vertical position. After a few seconds have elapsed the rocket will tilt itself into a south-easterly direction. The projected take-off trace will go over the Bahama Islands where there are tracking stations for missiles. At the moment the fuel of the first stage gives out, the 3-stage rocket will be 36 miles above ground—or rather the ocean—and 25 miles from the take-off site measured horizontally. A second or two later, the vehicle is no longer a 3-stage rocket, and there are now two rockets in the air. The second stage, still carrying the third stage and the satellite on top of that, has begun to burn and has lifted itself out of the used-up first stage. The first stage continues to travel on momentum, of course, but since it is no longer actively powered, it quickly lags behind the second stage.

The first stage will rise to a maximum height of 65 miles before it begins to fall back. It will fall into the ocean some 230

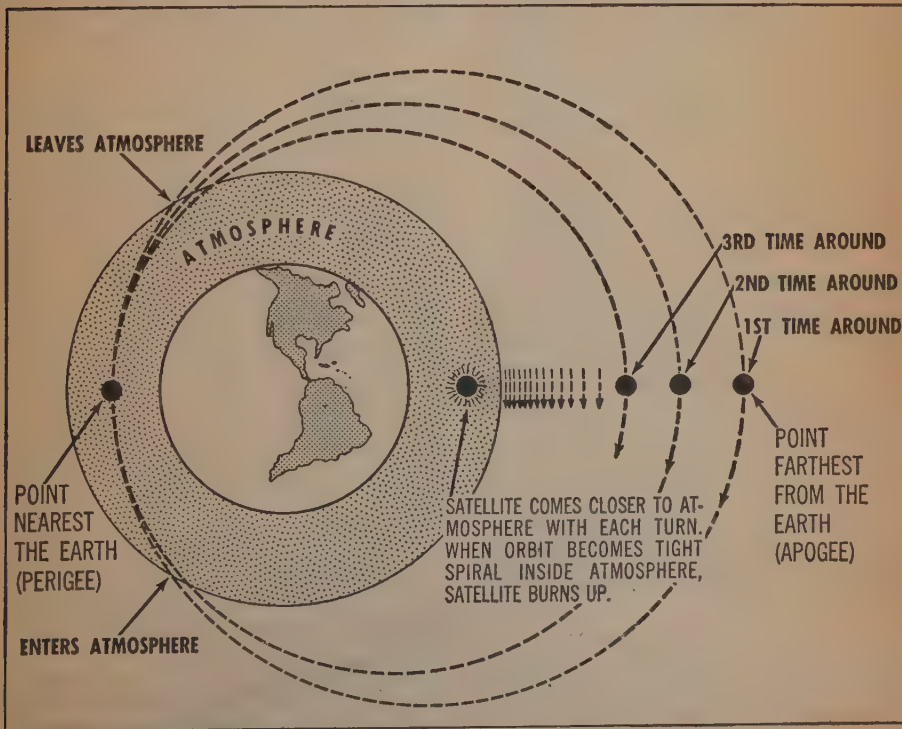
miles from the take-off site. Meantime the second stage has exhausted its fuel; at the moment its motor stopped burning it was 140 miles above sea level and the same number of miles from the take-off site in horizontal distance. But the third stage will not immediately separate from the second stage. The second and third stages together will continue to rise on momentum, gaining altitude but losing some speed in the process. About 10 minutes after take-off, the second and third stages together will be 700 miles from the take-off site and will have reached the highest point of the common trajectory, between 200 and 300 miles above sea level. At that moment the third stage will separate from the second stage. Another 10 minutes later the second stage will splash into the sea, 1,400-1,500 miles from the take-off site, and the third stage will be in an orbit around the earth.

At about that time the satellite will separate from the third stage, but this separation will be very gentle, being accomplished by the release of a tensed spring on which the satellite was mounted.

The Russians must have followed a very similar procedure, although the figures for the heights reached and distances traveled by the various stages are certainly not the same. But while the Vanguard rocket will shed the nose cone protecting the satellite at about the time the second stage begins to burn—the rocket is then so high that the nose cone is no longer needed—the Russians carried theirs into the orbit.

In all cases the various components, meaning third stage and satellite and the nose cone, if any, will at first drift slowly apart but will be in the same orbit for a number of revolutions. Then they will slowly assume different orbits. While it is true that weight and shape make no difference in a permanent orbit well outside the atmosphere this statement does not apply to motion in a temporary orbit. In every elliptical orbit they will pass through two points (see diagram) which form a straight line with the center of the earth. The point nearest the ground is called perigee (from Greek *peri*, meaning "around" and the Greek word *gaia* for "earth") while the point farthest from the ground is called

ORBIT OF A TEMPORARY SATELLITE



apogee (the Greek prefix *apo* means "away from"); for Vanguard, the planned height of the perigee will be 200 miles and the planned height of the apogee 1,600 miles. The air resistance to be expected at perigee will be feeble indeed, but it is there and because it is there a satellite will lose a small fraction of its momentum every time it passes through its perigee. The result of having lost some momentum is that the next apogee point will not be quite as far from the ground as the preceding one. If it was 1,600 miles for the first time it may be 1,599.88 miles the second time and again a little less the third time. This gradual shrinking of the orbit is called the orbital decay.

As distinct from its behavior in empty space, the weight and shape of an object becomes important during this passage through the upper atmosphere. Obviously a solid iron ball would have more momentum than a thin and hollow aluminum sphere of the same diameter. But the loss of momentum is the same each time because both objects have the same diameter. Since the solid iron ball has more momentum at the outset it will last longer in the orbit. Likewise two objects which have the same weight but different shapes would suffer different momentum losses. If the two objects are a burned out cylindrical rocket and a spherical satellite, the rocket, having far more area, will suffer orbital decay faster than the satellite. Since its orbit shrinks faster it will move faster, being on a shorter orbit, and will forge ahead of the satellite as seen from the ground.

As the orbit shrinks it becomes more circular and finally, after one or several years, it will be a circle at the height the perigee then has. It must be mentioned that the perigee also approaches the ground, though at a far lesser rate than the apogee. The circular orbit established at the end of the orbital decay will be entirely in the upper atmosphere. Hence it will immediately decay into a still different orbit, namely a tight spiral along which it sinks deeper and deeper into the atmosphere. When it reaches denser atmospheric layers, still very nearly a vacuum by sea level standards, it will be subjected to heating up because of air resistance. Finally this heat will rise to such a point that the satellite, or the third stage before it, is simply vaporized. This so-called burn-up is going to be a magnificent spectacle if it should take place in the night sky.

The reason why nothing like this happens on the way out is that the three-step rocket builds up its high speed gradually. When it is already more than 20 miles high its speed is still "only" about a mile

per second. This may heat up the skin and especially the nose but not to a dangerous extent. The really high satellite velocities are not attained until the rocket is at the very fringes of the atmosphere. But when the satellite returns it is going at its full speed. Sinking in the earth's gravitational field makes it even increase its speed and when it returns to the 20 mile layer, if it gets down that far, it is going about five times as fast as it did at the same altitude on the way out.

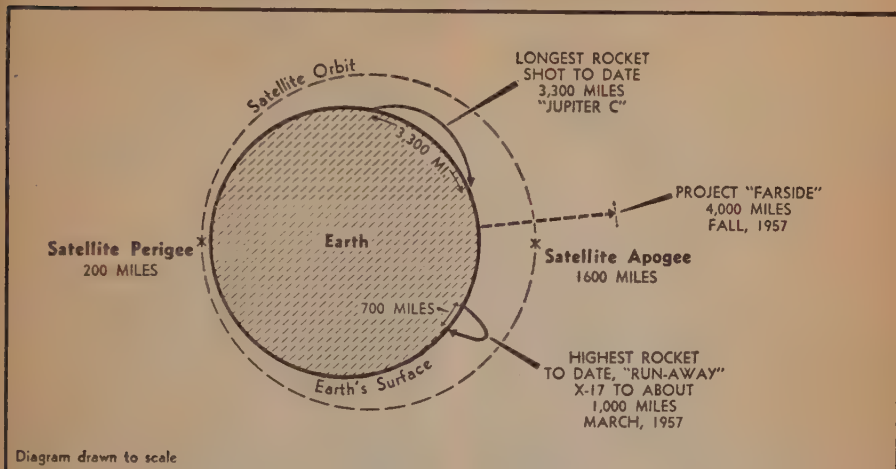
While the satellite is still in space, or rather for as long as its electric batteries will hold out, the instruments will report to the ground what they are built to report. They will count the number of cosmic rays the satellite encounters. They will report by an ingenious method on the number of dust grains which pit its surface. They will report on the earth's magnetic field. They will tell how hot the skin of the satellite becomes while in the sun and how quickly the skin cools off when the satellite enters the shadow of the earth.

As important as the data reported by the instruments are the data from observation of the satellite. The time it takes for the orbit to "decay," the time spent on the spiraling path, and the height at which the satellite finally burns up are all of the highest scientific and practical importance.

Well, if this is the fate of satellites and third stages in a temporary orbit how could one place one in a permanent orbit? There are two possible methods. The perigee altitude of a satellite is the height at which the third stage ceased burning. One can simply put this point so high that it is outside the atmosphere. If the perigee is outside the atmosphere every other point will be safely outside too. Or else one could fire the satellite in such a manner that the perigee is inside the atmosphere but the apogee is safely outside. Then, when the satellite reaches apogee for the first time an additional rocket charge, carried for this purpose, would be ignited. That would start a new orbit in which the perigee is at the height of the apogee of the original orbit (only half of which was actually traversed) and therefore outside the atmosphere along its whole length.

At the moment it is very difficult to decide just how far away the lowest permanent orbit could be placed. The fact that the third stage of the carrier rocket for Sputnik began losing altitude and gaining speed only a week after firing seems to indicate that the resistance is a bit higher than had originally been thought. But, after all, to find out things of this kind is the purpose of the satellite shots,

ROCKET RECORDS TO DATE



Project Farside

During the time which must elapse between writing this and its appearance in print another interesting rocket shot will have taken place. It is called Project Farside and is designed to carry a payload of about three and a half pounds to a height of 4,000 miles, half the diameter of the earth. The rocket assembly to do this is a four stage rocket, put together from existing solid-fuel military rockets. The first stage is what is called a "cluster" of four large solid fuel rockets, the second stage is a single rocket of the same type, the third stage a cluster of four smaller solid-fuel rockets—the type which is otherwise known as the ASP, or Altitude Sounding Projectile—and the fourth a single such rocket. In order to avoid air resistance as far as possible the Farside rocket will be launched from a balloon.

The assembly of solid-fuel rockets will hang, nose up, from a large plastic balloon which will be released and slowly climb to an altitude of from 70,000 to 80,000 feet. It will need several hours to do so. When it is at the peak, unable to climb any higher, more than 90 per cent of the atmosphere will be below it so that the rockets will have very little air resistance to overcome. To simplify the launching problem the rocket will shoot through the balloon. The skin of these large plastic balloons is so thin that the rocket will break it easily. Nor is this procedure wasteful in any way because these balloons can be used only

once, even if you do not shoot rockets through them. The Farside shots will be vertical shots, the various rockets will be left behind and fall down. Since they may scatter over a considerable area, and since the balloon during its climb may have drifted scores of miles, this experiment is performed with the wide Pacific Ocean underneath. It is quite likely that the fourth stage will burn up like a meteorite when it comes back and even the third stage may share this fate.

If the Farside rocket can be provided with one more stage, or else if the four stages are all composed of larger and more powerful rockets than the ones used, the top stage should be able to go all the way to the moon. In passing it may be remarked that this Moon Messenger, as the unmanned rocket to the moon is called in rocket literature, would be too heavy to be lifted by plastic balloons of advertised sizes. But even if larger balloons of this type should not exist it should be possible to build them.

Returning to the satellite programs it is quite certain that there will be a number of pure research satellites, both Russian and American. There might be an effort to fire one of them into a permanent orbit. Another one will probably be fired which will not carry any instrumentation at all but which will have the purpose of producing a very conspicuous object in the sky. This could be done, even if it is not

permitted to weigh more than, say, 20 pounds because of the carrier rockets available, by making the satellite a plastic ball which is colored white or light yellow by a chemical in the plastic or else which is plated with aluminum foil on the inside.

The ball would be carried folded and would be equipped with a tiny pressure cartridge containing compressed air. It should measure at least 25 feet in diameter when inflated. Since the plastic would

not be stretched like a rubber balloon but just be inflated it would retain its shape even if punctured by a meteorite. The air would then escape, of course, but the ball would not collapse because of pressure from the outside since there isn't any such outside pressure in space. If this satellite, which would appear as bright as the evening star, if not brighter, were in a permanent orbit it would be useful for navigational purposes, especially for small ships.

TV Satellites

At a somewhat later date a satellite holding a TV camera would follow. The type of TV show now in commercial use would not be usable for making a "spy in the sky" because of what is called poor resolution. The term simply means that you cannot enlarge the picture much without losing detail. But this poor resolution would be good enough for the purpose for which it has been advocated, which is to follow the movement of the major air masses across the globe and utilize this information for extending weather forecasts.

One use of artificial satellites which might have major commercial possibilities hinges on the existence of the 24-hour orbit which has been mentioned earlier. If one could distribute three TV relay stations evenly spaced in this orbit one could provide TV coverage for most of the inhabited areas of earth. The event to be broadcast would be beamed from the ground to one of these three satellites in the 24-hour orbit. The satellite would beam it back down to the ground in a

wide beam which covers many thousands of square miles. Simultaneously it would beam the same telecast to the other two satellites which would beam it to the ground below them.

This use of artificial satellites is, of course, in the future, but not in the distant future. While it is probable that these relay stations could be made automatic so that the presence of a human being is not required for their functioning there is some doubt whether they could be put into their orbit without a manned ship.

One day a human will have to go into an orbit around the earth, even if only for a fairly short time, say one day, on the first try. The rocket which will carry a human being into space will also have to be a three-stage rocket but of large dimensions since the "payload" will weigh more than a ton. The payload will be a small airplane-shaped rocket ship so that the pilot can land after re-entering the atmosphere.

Man in Space

"Maybe," it has repeatedly been said, "rocket engineers may one day be able to build a rocket which can become a satellite. But you can design the rocket only, you cannot design the man. Man will not be able to stand the trip." Well, engineers have built a rocket that became a satellite and medical experts, while they cannot design the pilot can at least find out whether he would be able to stand the trip. It looks as if he will.

But in order to judge whether a pilot could stand the trip we first have to find out what he will have to undergo. The final speed with which he will move does not matter at all, speed cannot even be felt in frictionless space. But to reach the speed the rocket must accelerate. To understand just what is going to happen and why let us examine the take-off of a large liquid-fuel rocket in some detail and in order to have a measuring device of sorts

we'll assume that inside the rocket there is a spring scale with a one-pound weight bolted to it.

While the rocket stands still on its firing platform, the scale reads 1 pound; but now the rocket motor has been ignited, the fuel pumps are in action and the rocket lifts off. Seen from the outside, it seems to lift rather slowly; during the first second of the take-off it does not even climb its own length. But the velocity of the rocket, at the end of that first second, is 32 feet per second. At the end of the next second the velocity is 64 feet per second. At the end of the third second the velocity is 96 feet per second.

As the rocket begins its rise, the spring scale, which has the 1-pound weight bolted to it, will read 2 pounds. The reason is simple, once you understand the forces involved.

Under the influence of the earth's gravity alone, the scale reads 1 pound. But the acceleration of the rocket going up, due to the steady push of the burning rocket motor, is the same as the acceleration downward which gravity would produce. Therefore, the spring scale reads as if there were 2 pounds of weight resting on it. The force exerted by gravity is usually called *g*. In the rising rocket, the scale behaves as if the force were twice gravity, or 2 *g*, and it actually is, namely 1 *g* due to gravity and another force equal to 1 *g* due to the accelerated motion of the rocket. It is here that a distinction must be made. The spring scale reads 2 *g*, for reasons just explained. This is the "total acceleration" of the rocket. But with respect to the ground the rocket rises as if only 1 *g* were acting on it. The total acceleration is always 1 *g* larger than the "effective acceleration," no matter what the latter may be.

As the rocket continues to rise, moving faster and faster, the spring scale does not continue to read "2 *g*." Slowly the pointer creeps higher and higher. Again the reason is simple. When the rocket was ready for take-off, with all fuel tanks filled to the top, the push of the rocket motor was sufficient to produce that acceleration of 1 *g* "effective." But the rocket motor keeps gulping large quantities of fuel all the time. Hence, while the thrust of the rocket motor remains the same, the weight of the rocket decreases rather fast as the fuel is burned. If the rocket with its fuel weighed 12 tons at take-off and the thrust of the rocket motor was 24 tons, the effective acceleration produced was 1 *g*. After some time the rocket will weigh only 6 tons (6 tons of fuel having been consumed) but the thrust of the motor is still 24 tons. Since less weight is now to be lifted, the acceleration has climbed to 4 effective *g* (with the spring scale inside reading 5 pounds) so that the speed increases four times as fast as it did in the beginning. It is the only known case of a vehicle where not only the speed increases because of acceleration, but the acceleration itself increases, too.

Near the end of the burning time there is, therefore, an "acceleration peak" of as much as 7 or 8 *g* but which lasts for only a few seconds. In a three-stage rocket there would be three acceleration peaks, near the end of the burning period of each

stage. But the total burning time for a rocket going into an orbit would be just about 5 minutes.

After these figures had been calculated the next question was how such acceleration could be simulated on the ground. The answer was a large centrifuge which will fool a man into feeling as acceleration what is actually centrifugal force. Volunteers took the tests, which, incidentally, went farther than just testing for a flight to an orbit. The scientists reasoned as follows: the fastest man will ever have to travel to get into space is 7 miles per second. This is the so-called escape velocity, the speed at which a rocket could escape from earth forever; if a rocket attained this velocity it could go all the way to the moon. It was easy to calculate that a rocket, traveling with an acceleration of 3 *g*, which would make you feel as if you weighed 3 times as much as you actually did, would need 9 minutes and 31 seconds to attain escape velocity.

If the acceleration were higher than 3 *g*, one would, of course, reach escape velocity in a shorter time. The table of alternate choices for reaching escape velocity is:

FINAL VELOCITY: 7 MILES PER SECOND

Acceleration chosen:	Duration of acceleration:
3 <i>g</i>	9 min. 31 sec.
4 <i>g</i>	6 " 21 "
5 <i>g</i>	4 " 45 "
6 <i>g</i>	3 " 48 "
7 <i>g</i>	3 " 10 "
8 <i>g</i>	2 " 40 "
9 <i>g</i>	2 " 20 "
10 <i>g</i>	2 " 6 "

The obvious question was first: could anybody stand any of these accelerations for the necessary time? And secondly: which was easier on the pilot, 3 *g* for 9½ minutes or 7 *g* for 3 minutes and 10 seconds? Volunteers who went through the whole series could report that any one of the choices offered by the table could be endured, but that it was somewhat less strenuous to suffer 4 minutes at 6 *g* than 9½ minutes at 3 *g*.

One volunteer, incidentally, withstood a full 17 *g* for a little more than a minute, a figure which any doctor prior to these tests would have declared fatal without any hesitation.

Zero-G

So there is no need to worry about the health of a pilot for the period the power is on and the spring scale reads high. But how does the spring scale read when the power is off? It does not return to

1 pound, as one may think. It will read: zero. This statement always tends to be surprising at first hearing, but it is really simple. The rocket no longer accelerates, it climbs on momentum. The earth's gravi-

tational pull also fails to register on the scale because the free-coasting rocket does not resist it in any way. Hence there is no force acting on rocket or pilot or scale. In the past this condition was called "free fall," with the word "free" supposed to suggest "free of all strain." But the second word, namely "fall," always suggested a downward movement which was wrong. Hence this term has been abandoned as being unintentionally misleading, and the term "zero-g" has come into use.

How will the pilot's body react to zero-g?

There is no way of producing zero-g on the ground, but it can be imitated for a short time in flight. The method consists of going into a shallow power dive with a fast plane to build up as much speed as possible. Then the pilot pulls out of the

power dive, simultaneously shutting down his engine. This sends the plane into an arc that is traveled on momentum only. For as long as he is in this arc—maximum: half a minute—the pilot experiences zero-g. Quite a number of such tests have been carried out at Randolph Air Force Base in Texas by Dr. Siegfried Gerathewohl and others. The results fall into three very definite classes. The test subjects, Air Force personnel and civilians with varying degrees of flying experience either declared: (a) this is something I won't do again, or (b) I can't say it's pleasant but I can do it if necessary and (c) the most wonderful experience in my life, I can't wait for another flight.

The pioneer space crews would, of course, be selected from the people who make statements like the third one.

Dangers in Space

In addition to strains produced by the flight itself, there are other dangers to people who venture above the atmosphere. The first of these is radiation from the sun. In round figures, sunlight should be about three times as intense at the top of the atmosphere as it is at the atmosphere's bottom. But fortunately none of this radiation can pass through the metal skin of the ship, so that special attention needs to be paid only to the windows which must absorb all the ultraviolet and a good portion of the visible radiation too.

The next danger is the so-called cosmic rays. Cosmic rays are not rays in the usual meaning of the word, but are actually the nuclei of atoms traveling at enormous speeds. Most of these nuclei are those of the hydrogen atom, the lightest and simplest of all atoms. Every once in a while a cosmic ray turns out to be the nucleus of a heavier atom. When such a high-speed atomic nucleus enters the atmosphere, it sooner or later collides with atoms which make up the atmosphere, thereby producing a number of "secondaries." The entering nucleus is logically called the "primary." The term "heavy primaries," which is often used, merely means that the primary was a heavier nucleus than a hydrogen nucleus.

To stop a primary, and especially a heavy primary plus all the secondaries it produces, would require shielding heavy enough to serve in an atomic power plant or as armor on a battleship. And just because of the secondaries which are pro-

duced when a primary collides with matter, a little protection is worse than none at all. As somebody once said (the authorship of this sentence is disputed), "It is like trying to protect yourself from bullets by hiding behind a few layers of window glass." Since protection is impossible, the only alternative is to find out whether a man could brave the cosmic rays he might encounter and survive without harm. The best available information indicates that this is actually possible for a limited period, a few days or maybe even a few weeks. The new anti-radiation drugs may lengthen the "safe" time very appreciably.*

The third danger awaiting man in space is the meteorites. When it comes to meteorites, nothing is as misleading as a visit to a museum which has a good meteorite collection, for example the Hayden Planetarium in New York. There you see meteorites which have been recovered from various places, weighing a ton or two, with some gigantic specimens weighing 8 and 10 and even 13 tons. It is easy to conclude from such a collection that space must be an exceedingly dangerous place, what with 5-ton boulders and 10-ton chunks of iron whizzing around at a rate estimated to be 40 miles per second.

These large meteorites obviously exist, since we have them in our museums, but to conclude that they are common is like believing you can't go for a Sunday's sail offshore without bumping into a whale, fighting off a giant octopus or two and holding assorted sharks at bay. The

* Some cosmic ray research was performed by lifting small animals like hamsters and guinea pigs in airtight cages to 100,000 feet with large plastic balloons and leaving them at these altitudes for many hours. So far nothing more drastic has happened than a few gray and white hairs in the pelts of the animals. The unpigmented hairs are ascribed to cosmic ray impacts, but just how they bleached the hairs is still unknown.

vast majority of all meteorites are what is called dust on the ground. Astronomers have succeeded in making estimates of the number of meteorites which strike the earth. A meteorite half an inch in diameter may seem ridiculously small when compared with the giants in the museum, but to astronomers this is a big one. Well, the estimate says that about 28,000 meteorites of that size or larger strike the earth in 24 hours.

A meteorite 1/100th of an inch in diameter is, of course, a much more common variety than its half-inch brother, and the figure for the number of these which strike the earth during any consecutive 24 hours is correspondingly larger. In the same period of time, 4,500 million meteorites 1/100th of an inch in diameter burn up in the earth's atmosphere. Add to these, 3,000 million meteorites larger than 1/100th of an inch in diameter, which strike the earth daily, and you get a total of 7,500 million hits per day. These enormous figures do sound frightening but we must keep two things in mind: first, most of them are very tiny dust particles; second, the earth is a target nearly 8,000 miles in diameter. When the target is as small as an airplane, the number of hits is reduced proportionately.

For purposes of calculation it was assumed that the rocket has an exposed area of 1,000 square feet. For such a size the expected number of hits by a meteorite 1/100th of an inch in diameter is ridiculously small; the ship is likely to be struck by one every 20,400 hours! This means that 850 days will go by between hits. And the figure even includes all the meteorites larger than 1/100th of an inch. If you go down to particles of 1/100th of a millimeter in diameter—this is about the particle size of very fine silt—you can expect one hit every two hours.

These figures show clearly that a hit from a large meteorite would be so rare that it can be discounted, but that hits of very fine dust particles have to be expected.

If the outer skin of the rocket consisted of sheet steel $\frac{1}{8}$ of an inch thick, it could stop every meteorite up to one millimeter (just about the thickness of a dime) in diameter. But there is a better way, first suggested by Prof. Fred L. Whipple of Harvard. If only a very thin aluminum sheet were placed between the meteorite and the ship's skin, the latter could be much thinner. For at impact velocities up to 40 miles per second, the particle would be vaporized just because it struck something. A portion of the outer shield, probably somewhat larger than the diameter of the dust particle, would disappear too. By perforating the outer skin, the so-called meteor bumper, the power of the impact would be broken so that the ship's skin proper would not be damaged at all. Naturally the meteor bumper would be no protection against a pebble-sized meteorite, but the real worry is the cosmic dust, which is stopped by the meteor bumper.

There is, then, no known reason why a manned vehicle could not go into an orbit. This temporary manned satellite would be the next big step in the conquest of space. It would be a temporary satellite because the pilot of this ship would stay up for only a limited period of time, say 24 hours. Then, by reducing his velocity by firing his rocket motor in the direction of his movement, he would break out of his orbit and enter the atmosphere at a very shallow angle. Even at that shallow angle a final burn-up would threaten an unmanned ship, but here we have a ship controlled by its pilot. If the ship heats up too much, he can escape to higher layers of the atmosphere where there is less air resistance and give his ship a chance to cool off again. It would cool even more effectively if he positioned his ship in such a way that he would be in the shadow of the earth so that the sun's rays do not produce additional heating.

If, prior to breaking out of his orbit, he had jettisoned anything, the jettisoned object would keep orbiting.

The Space Station

This fundamental fact provides the basis for the idea of a space station. Space station also signifies an artificial satellite, but one which is manned. At present the procedure of putting a space station into the sky is visualized as a job with three distinct phases. First the station would be built on the ground and tested thoroughly. Then it would be taken apart to be transported piecemeal to the orbit chosen for it, probably the 2-hour orbit 1,075 miles above sea level. The sections could simply

be left in space and, like the jettisoned object of our example, they would stay there.

Originally it was thought that only one type of rocketship would be used throughout the whole space-station program. This rocketship was supposed to carry up the space station piecemeal, then to bring the assembly crew (the same people who had disassembled it on the ground) and later on the crew for the station, and finally to serve as a supply ship for the

station, including the carrying of relief crews. To concentrate on one type of rocketship only seemed to be the most practical solution. But a recalculation of the whole problem from the point of view of fuel economy suggests that two types of ships would be better, the second type being an unmanned freight carrier. Of course it would simply be impossible to direct an unmanned freight carrier to a certain point of a certain orbit at a specific moment by remote control from the ground. But the problem changes radically if a manned ship is waiting in the orbit to take over control from the ground station as soon as the freight carrier has left the atmosphere.

The third phase of the job would be the reassembly of the station, performed by men wearing space suits designed especially for this purpose. Prototypes of such space suits are already in existence.

The space station is not in the immediate future like the artificial satellites. At best ten years will go by between the first satellite shot and the assembly of the space station. But it will be something well worth having. The main concern of the space station will be the earth. Just as one can get a better view of a landscape from an airplane than from horseback, from the space station one could get an excellent view of the earth as a whole and, with proper optical instruments, of fine detail when necessary. At any one moment, nearly half the earth would be visible to the space station; and within a 24-hour period, every point could be inspected at least once while it was daylight for that point.

This visual inspection of the ground from the space station, far superior to inspection by means of remotely controlled television, naturally has its military implications. On the peaceful side no iceberg could approach the shipping lanes and no ship would get into distress unnoticed. On the military side no fleet maneuver could take place without being observed in detail. On the peaceful side no airliner, after an emergency landing, would be out of touch with the space station. A two-way conversation with the space station by radio on a 3-centimeter short wave needs surprisingly little power, a set powered by three flashlight batteries could do it. On the military side it would be easy to count the number of jet bombers taking off from an air base and contrary to Mr. Khrushchev's pronouncement the long range missile has not made the long range bomber obsolete. It is acknowledged military experience over the last century that new weapons are always additions to the arsenal but that they very rarely make an existent weapon wholly obsolete.

From the military point of view, the space station would be the most efficient kind of open-sky inspection we can imagine. It could also be a weapon by acting as a guidance system for long range missiles fired from one point to the ground to another point on the ground. To bring the missiles up to the station might not be economical because of the large amount of fuel required to bring something to the station, namely about 140 pounds of fuel for every pound of payload that gets there.

Whether the space station itself would be vulnerable to guided missiles, or rather how vulnerable it would be, is at present much discussed among experts. The question is mainly how well the space station could defend itself against missiles fired at it from the ground.

There is no doubt, however, about its value for such peaceful purposes as have been mentioned and for a few others. The station, being outside the annoying haze of the earth's atmosphere, would be an astronomical observatory of almost infinite capacity. Most of the astronomical puzzles of today could be solved within a short time with a photographic telescope operated from the space station. (It is only in the nature of things that the space station would discover a new set of astronomical puzzles which it could *not* solve.)

The space station would be an entirely novel research laboratory, a laboratory where the sun would be willing to heat any substance to any degree of heat without any charge at all, where a substance could be cooled off to very nearly absolute zero simply by placing it in the shadow of the space station. It would be a laboratory where cubic miles of vacuum would be accessible to anybody interested in vacuum techniques. It would be a laboratory where the growth of crystals and living cells at zero-*g* could be studied. It would probably pay for itself within a few years.

Finally, the space station would be the base of operations for the assembly of the deep space ships for exploration of the moon and the neighboring planets. Like the space station itself these ships would be built on the ground, disassembled and carried piecemeal into the orbit to be reassembled and fueled there. A manned flight around the moon, without an attempt at landing, would be man's first trip into the space beyond the orbits around the earth. This might be done almost at once after the space station is finished. A flight to the moon with landing could follow a very few years later. And then the expeditions to the nearest planets can be planned. We can be certain that Man will set foot on the neighboring planets within a few decades.

The International Geophysical Year

THE SATELLITE SHOTS which open the door to space, are technically just a part in a more comprehensive scientific venture known as the International Geophysical Year, or IGY. It began on July, 1957 and will run to the end of 1958. The "year" has an extra six months, partly to permit leeway for getting started and partly for the purpose of observing through overlapping seasons.

The purpose of the IGY is nothing less than the investigation of the planet Earth. As Earth is inhabited by many nations, IGY becomes an international job in which many countries participate—64, to be exact. Where IGY is concerned, the Iron Curtain hardly exists, the Russians are as interested in what is going on in the Arctic Ocean, say, as are Canadians, Americans and Norwegians and they can find out only by collaborating.

The total manpower of the IGY is about 8000 scientists, from astronomers to zoologists. The total expense is estimated to be one half billion dollars, shared by the governments of participating countries.

Dozens of modern research vessels are traveling the seven seas for making observations, hundreds of high altitude instrument-carrying research rockets have been prepared; several hundred vantage points for observations have been scattered all over the globe. Airplanes have hundreds of flights to carry men and equipment to these vantage points.

Like everything else, the IGY is a concept which grew slowly and it is not even the first instance of such international collaboration for scientific purposes. During the last century there was such an effort to explore the Arctic regions. It was called the Polar Year (actually it was a North Polar Year) and it took place in 1882. Fifty years later the nations again got together on a Second Polar Year (1932) was mostly devoted to the Antarctic Regions of which little was known. When the second World War was over scientific circles began to wonder whether it might not be useful to have another such "year" on the 25th anniversary of the Second Polar Year. Because it had to be an international venture, the matter was discussed through the International Council of Scientific Unions. Because of the great progress made in various fields, especially in the field of air transportation, it was decided that the new "year" should not be devoted to an area, like the Arctic or the Antarctic, but to the planet Earth as a whole. In 1952 the International Council set up a special planning organization, the *Comité Spécial de l'Année Géophysique Internationale*, abbreviated as CSAGI.

In every nation there exists a scientific body which is a member of the International Council of Scientific Unions. In the United States this body is the National Academy of Sciences. The National Academy first had to secure the participation of its own government (as did the equivalents of our National Academy in their respective countries) and then had to figure out what the United States could or should do. For this purpose a national planning organization was established, the National Committee for the International Geophysical Year. The various national committees, through CSAGI, then informed each other what they planned to do and these plans were coordinated. It goes without saying that the various countries, like individual scientists, have their specialties. The Danes, for example, excel in the checking of ocean currents and fish migrations. The geographic location of a country also plays a rôle, thus most of the work on the Arctic Ocean has been split between the Russians and the Canadians. On the other hand, many nations are interested in Antarctica so that the Antarctic Continent is dotted with a most international assembly of observing stations.

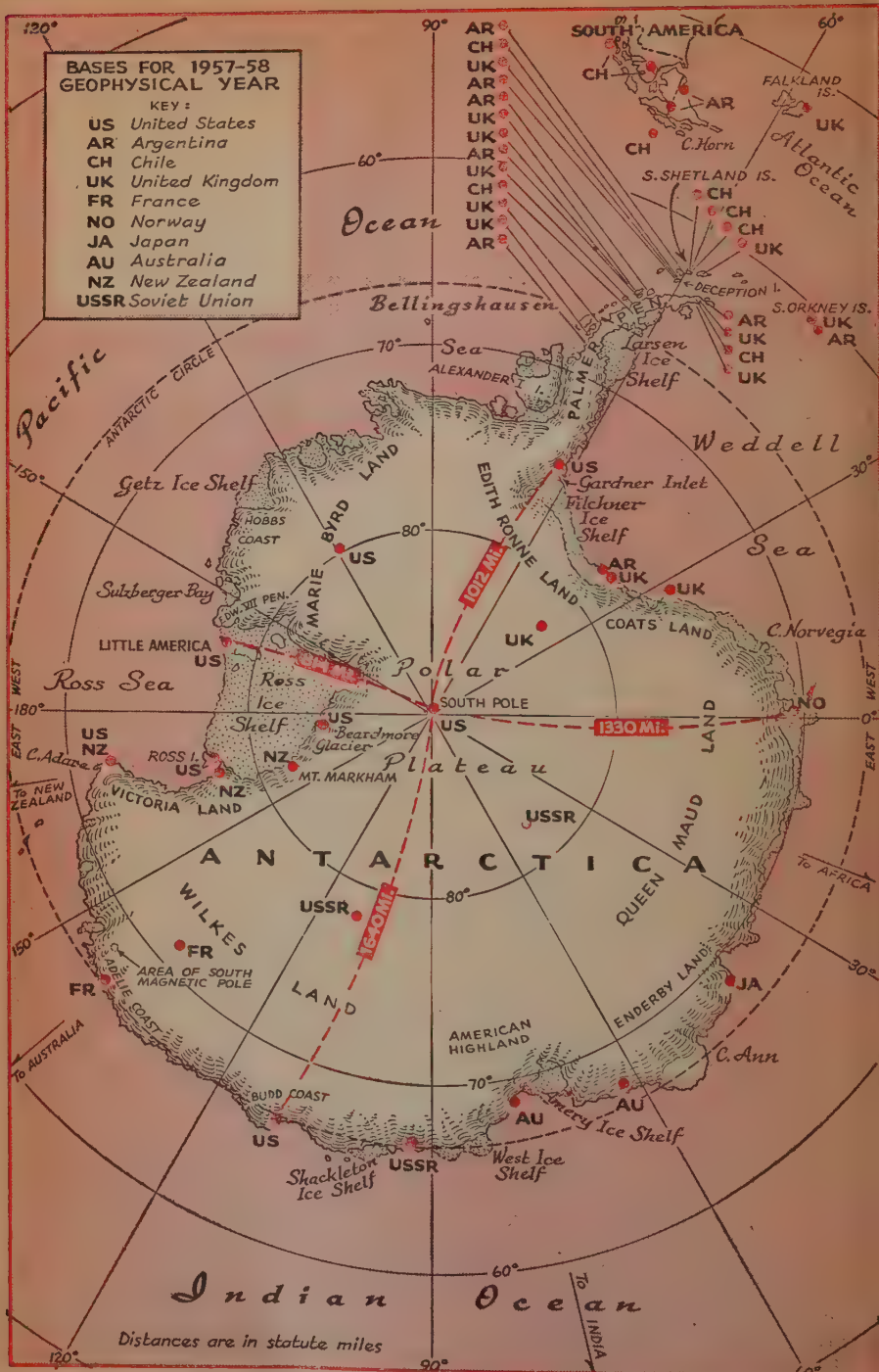
While every nation does what it can do best—cross-checking results with other nations—there is a schedule of so-called World Days. There are many natural events which should be observed from many different places simultaneously. For example, a meteorologist who would like to construct a world weather map will be incapable of accomplishing his task if he gets a weather report from Central Asia for the 10th of December, the Australian report for the 15th, the United States report for the 20th and reports from the high seas for all the dates in between. He needs reports from all over for the same date and, if at all possible, for the same hour. So six ten-day periods have been chosen to be World Meteorological Intervals, during these periods all stations will make intense weather studies. (The Periods are: Sept. 18–27 and December 12–21 in 1957; March 17–26, June 15–24, September 13–22 and December 12–21 in 1958.) Roughly three days in every month have been designated as Regular World Days; these days have been chosen because of predictable events, like days of the new moon, nights where meteors can be expected or days on which eclipses of the sun will take place (April 19 and October 10, 1958). These days will see intense studies of the events that take place, in addition to the routine work of the various stations.

The scientific value of the IGY lies mainly in the fact that the same natural

BASES FOR 1957-58 GEOPHYSICAL YEAR

KEY :

US United States
AR Argentina
CH Chile
UK United Kingdom
FR France
NO Norway
JA Japan
AU Australia
NZ New Zealand
USSR Soviet Union



event can be observed simultaneously from various places which are many thousands of miles apart.

One of the discoveries which the IGY has already brought (but not yet explained) is a mysterious rise of the water of the Arctic Ocean. Fourteen stations are concerned, among other things, with sea level changes in that ocean. Of these stations seven are Canadian, four are Russian, with one each from the United States, Icelandic and Finnish. The researchers on the American end found that there is a rise of a few inches which cannot be accounted for by tides or storms or other known factors. It happened at regular intervals of about four days. The researchers then checked with the Russians, they had observed it too.

If you ask just what the IGY scientists are after the answer is easy. It is "everything." It begins at the bottom of the ocean. Is the bottom water of the ocean warmed a bit by the hot interior of the earth? A device has been designed which may help us to find out. Furthermore: are there currents at the bottom of the ocean? We don't know any, but there are reasons for assuming that there must be. The IGY scientists will find out. Are there currents in the ocean at intermediate levels, say 500 fathoms down? We don't know but the IGY will try to find out. The surface currents, which are known, are being re-checked and re-mapped by ships belonging to ten different nations.

The land itself is the next thing to be investigated. Scientists are checking on the gravitational attraction of the earth in many places, they keep an eye on volcanoes and earthquake zones, they are especially concerned with the age of glaciers and the ice on both poles. Nobody knows right now, for example, how much ice there is on earth. In fact we do not know whether the Antarctic Continent is actually a continent which is iced over or whether it is two continents plus a number of islands which only seem to be a single continent because of a common ice cover. After the IGY is over we'll know.

We will also have a good idea of just when the ice of the poles and of the larger glaciers formed and we might be able to predict a general climatic trend because of this knowledge.

The next thing to be studied is the atmosphere. The lower atmosphere, technically known as the troposphere, is the layer near the ground in which all the events take place which we call by the name of "weather." A thorough and planet-wide study of weather will result in improved forecasts which may save whole crops of whole countries and areas. With perfect weather knowledge, we'll also be able to predict floods in advance.

The higher layers of the atmosphere are the stratosphere, about which we want to know more because future air transport may take place in the lower stratosphere to a large extent. And although the stratosphere—from 10 to 40 miles altitude—does not have any "weather" in the customary sense of the word except for high winds, it is possible that the stratosphere does influence the weather below in the troposphere. It is worth some effort to find out. Above the stratosphere there is another very tenuous layer which is called the ionosphere. It has its name from layers of so-called "ionized gas" which are caused by the sun's radiation. These ionized layers are of great practical importance because they act like mirrors to radio waves and long distance radio communication is based on the existence of these layers. Naturally we want to know all about them that can be known.

The various projects of the IGY will not all be concluded on the same day, the ocean researchers are already considering extending their activities for another six months into 1959. And the satellites, because of the slow rate of orbital decay, will still be in space many years after the IGY has officially closed. But at the end of the IGY we will know much more about our planet than we do now and much of the new information will produce useful results soon.

EDITOR'S NOTE

If, during your reading of Professor Ley's article, you were conscious of having read some of the material before, your recall is quite correct. Our 1957 edition included another article by Professor Ley, "Jets—Rockets—Missiles."

This article contained an excellent description of sending an artificial satellite into space. We felt that the material was so timely and interesting that we asked Professor Ley to repeat and bring up to date this material for your benefit and the benefit of our new readers.

THE MIDDLE EAST IN FERMENT

By J. C. HUREWITZ

THE DAWN OF 1957 found an unprepared United States saddled with primary responsibility for the defense of Western interests in the Middle East, an area that stretches from Egypt and the Sudan in northeast Africa to the eastern frontiers of Iran in non-Soviet southwest Asia. As recently as World War II the Middle East still lay securely within the Western—chiefly British—orbit. The swift decline of British power since then, however, has coincided with the menacing rise of Soviet interest and influence in the region, particularly in the Arab sector.

A glance at the map will readily disclose the strategic centrality of the Middle East for American security planners. Lying at the juncture of three continents, the Middle East can function either as a bridge or a barrier in international communications. This was dramatically demonstrated by the blockage of the Suez Canal for nearly half a year in the crisis of 1956-57. From its opening in November 1869 to October 1956 the canal served as the principal transportation artery between Europe and Asia and Africa. Indeed, it became the world's most heavily traveled sea lane by 1956, when in the first nine months an estimated 15 per cent of the total international ocean-going traffic passed through the man-made ditch.

Through the Suez Canal have been funneled chiefly raw materials from Asia and Africa and finished products from Western Europe. Crude oil, most of it destined for our trans-Atlantic allies, accounted for nearly two-thirds of the Suez shipping. Petroleum grew steadily in importance as a source of energy in postwar Western Europe and by 1955 furnished some 18 per cent of its overall energy needs. Three-fourths of this oil was imported from the Middle East. Thus not only the military establishments of the NATO community in Europe but an ever-widening segment of its basic industry depended on Middle East oil.

Oil Reserves

Middle East petroleum production rose from 8.1 per cent of the non-Soviet world's

total in 1945 to more than 20 per cent eleven years later. Of even greater significance, the estimated oil reserves in the region multiplied in the same period from 19 billion barrels or 38 per cent of the non-Soviet world's total to 144.4 billion or well over 70 per cent, as contrasted with the estimated 35 billion for the United States. Virtually all Middle East oil is being developed by companies of Western nationality, which by the end of 1955 had invested approximately \$2.75 billion in fixed capital assets. Of this sum about \$1.29 billion or nearly one-half represented investment by United States companies, whose share of the estimated reserves under prevailing concessions approached 60 per cent of the regional total. Most impressive were the direct revenues accruing to the participating Middle East governments, which in 1956—despite the post-Suez cutbacks—received \$940 million as their half share of the net profits, in contrast to \$880 million in 1955.

The major producing fields lie in countries adjacent to the Persian Gulf, four-fifths of the established reserves concentrated in Arab lands. Non-Arab Iran, the principal producing state in the region before the Anglo-Iranian oil dispute (1951-54), recovered quickly after the settlement so that by June 1957 it was exporting 731,000 b/d or some 90,000 b/d more than on the eve of the crisis. But Iran ranked third after Kuwait and Saudi Arabia, each of which exported more than one million b/d. Moreover, in the Arab East are located not only the Suez Canal but pipeline systems that crisscross Jordan, Syria and Lebanon.

What happens in and to Arab lands has thus become of manifest concern to the United States. Involved are problems of protecting American private investment and of fueling the NATO machine, the kingpin of the elaborate collective security system that the West has devised in defense against an expansive Soviet Union. This helps explain why the United States has not framed a viable policy toward the Arab-Israel area.

THE ARAB-ISRAEL DISPUTE

Sympathy toward Israel has run deep in the United States. The feeling of friendship is compounded of humanitarianism in support of the European Jews uprooted by the Nazis in World War II, of respect

for the nascent state's military stamina against overwhelming numerical odds, of the Israelis' ingenuity in organizing available technical skills for the rational exploitation of their country's niggardly

natural resources, and of the pro-Western orientation of the Israel government and a massive majority of the Israel public.

At the same time the United States has given its blessings to national self-determination throughout the Arab East and has been generous in its offer of economic and technical assistance to the newly sovereign Arab states, encouraging them to launch comprehensive development programs. Pro-Arab sentiment is widespread in the United States among missionaries whose churches have served Arab lands for well over a century, among those who have invested in the oil industry and other business ventures in the Arab East, and many who have been disturbed by the lingering phenomenon of an Arab refugee population.

The displaced Palestine Arabs, whose number because of internal growth is pushing toward a million, forms only one of the legacies of the Arab-Israel war of 1948. From its birth a decade ago Israel has carried on without permanent boundaries. Originally created under United Nations auspices as a provisional expedient to terminate the hostilities, the armistice system has been progressively breaking down. The city of Jerusalem, which many hoped might be placed under an international regime, remains more divided than ever. Having failed to defeat Israel on the field of battle, the Arab League has sought to strangle their hated neighbor through economic blockade.

Favors with Each Hand

In this context the United States practice of distributing favors alternately to

the two antagonists has elicited little approval from either party. Most Arab nationalists are persuaded that the United States is incurably pro-Israel, a conviction that cannot be shaken short of full endorsement of their hopes of eliminating the new state altogether. In their eyes, Israel is America's spoiled child and is kept alive artificially through America's mistaken generosity. The Israelis for their part tend to accuse the United States of over-indulging Arab nationalist extremism and of thereby delaying a formal peace settlement.

The reasons for United States pussy-footing are clear enough. The possession of strategic real estate and of oil gives the Arabs diplomatic advantages in a period of world tension. Washington therefore has been prone to show greater patience with the Arabs and to attempt placing Israel in cold storage. Yet the United States is far from ready to sell Israel down the Jordan. Rather it is argued that the avowed American policy of "friendly impartiality" is designed ultimately to lead the disputants to an accommodated settlement.

The American and Soviet tactics after 1955 of competing to arm the Arab states, while withholding modern weapons from Israel, has symptomized the renewal and intensification of the cold war in the Middle East. It has already contributed to the explosion in Sinai in the fall of 1956 and, with the quickening of Soviet-American rivalry in the summer of 1957, seemed to be laying the ground for fresh outbreaks.

ARAB UNITY NATIONALISM

Arab nationalism is essentially a twentieth-century phenomenon. Admittedly, nationalism came to Egypt as early as the 1870's. But that was Egyptian, not Arab, nationalism. Indeed, Egyptians did not identify themselves in the nationalist sense with the rest of the Arab world until the late 1930's, when the Palestine problem began to provide a political focus for Arab nationalists everywhere. Even then the identification, official and public, spread slowly.

The hatred engendered against Zionism and Israel in the years following merely constituted the most extreme expression of a general sense of disillusionment in Europe that bred anger and hostility. Arab outrage, primarily in the Fertile Crescent, was itself a product of the

relatively brief experience with British and French mandatory rule after World War I. Arab nationalists viewed Zionism and Israel as an unwarranted intrusion and a beachhead, not of democracy, but of European imperialism. And because Israel was located in the Fertile Crescent, these emotions mingled with the obsessive preoccupation with schemes for Arab unity that abounded in that particular area.

Nor is it surprising that the Arab League, the one unity project that saw the light, served from the outset as an agency of Egyptian foreign policy. The most populous Arab country, Egypt, became the nub of Arab cultural life, providing leadership in religion, education, the professions and, most recently, military organization.

Mr. Arab Unity

The military *junta* that overthrew the dynasty in 1952 launched a comprehensive revolution in the internal life of Egypt but preserved intact the essential features of the *ancien régime's* external Arab policy. Under the aegis of the youthful army officers, the policy prospered as never before. Radio Cairo became a potent force from one end of the Arab world to the other and played a major role in building Gamal 'Abd al-Nasir as the symbol of Arab unity.

'Abd al-Nasir's meteoric rise to fame in the Arab East started with his signing in September 1955 of an arms deal with

Czechoslovakia and the U.S.S.R. and reached its peak with the nationalization in July 1956 of the Suez Canal Company. What particularly endeared the Egyptian president to the Arab masses was his seeming ability to stand up and trade body blows with the great powers of the West. The military debacle in Sinai in the fall of 1956 and the absence of new grand gestures of defiance in subsequent months checked, for the time being at least, the further growth of 'Abd al-Nasir's popularity. Still the elaborate propaganda machinery of the Egyptian military regime worked round the clock to keep alive the image of 'Abd al-Nasir as "Mr. Arab Unity."

THE BAGHDAD PACT

The British surrender in October 1954 of the massive, versatile base in the Suez Canal zone marked the culmination of a process of British military contraction in the Middle East that had begun with the evacuation in 1946 of wartime garrisons in Syria and Lebanon, withdrawal in 1947 from Cairo and Alexandria, and the abandonment to chaos in 1948 of the Palestine mandate. The piecemeal dismantling of the British military system conformed to post-war realities. Imperialism had become outmoded in the West, and the depleted British exchequer could no longer afford farflung bases in the face of mounting costs.

But the headlong decline of British power deprived the West of a means—tested and proved in World War II—of safeguarding its regional interests and of integrating the Middle East into its global military arrangements. Efforts were therefore made in 1951–52 to establish a comprehensive collective security system for the Middle East with the local states and the Western powers participating on an equal basis. But these efforts failed because the Arab states in particular did not share the West's desire to contain Soviet aggression. The Arab governments instead tended to view Britain and France as the aggressors because of their continued controls in various parts of the Arab world.

Secretary of State John Foster Dulles then sought in 1953 to apply the collective security principle to the Middle East on a segmental basis, on the theory that "the northern tier of nations" along the Soviet frontier were sensitized to the "common danger."

U. S. Encourages Pact

With American encouragement and assistance, Turkey, Iran, Pakistan and one Arab country, Iraq, joined Britain in 1955 to form a multilateral security system that came to be known as the Baghdad Pact. But the very creation of the organization, which was designed to circumvent the resistance of the remaining Middle East states and their immediate neighbors to collaboration with the West, merely made those states—notably India, Afghanistan, Syria and Egypt—predisposed to accept favors from the U.S.S.R. and intensified the tensions in the Arab-Israel area.

The United States did not join the pact as a full member but merely agreed to sit on its economic and countersubversion committees and, after the Suez crisis, on its military committee as well. This straddling of the issue deprived the organization of military effectiveness and exposed the United States to criticism as much from the adherents of the pact as from its enemies.

SOVIET INTERVENTION

The Baghdad Pact provided the Russians with a long-sought opportunity for meddling in the affairs of the Middle East. If we are to understand Russia's actions in the Middle East we must keep in mind the Kremlin's obsessive anxiety over "capitalist encirclement." The apprehension over the Middle East frontier, where no

submissive zone separates the U.S.S.R. from the outside world, is perhaps greater today than anywhere else along the Soviet periphery. The Middle East adjoins vulnerable districts of the U.S.S.R., where essential industries and raw materials are concentrated.

Immediately after World War II the Kremlin tried, as in Eastern Europe, to dismember Iran and convert Turkey into a satellite. Stopped in their tracks by the determined Western stand, within the United Nations and beyond, the Russians lost initiative in the Middle East for nearly a decade. Nevertheless Moscow supported every move that relieved Britain and France of their bases, influence and interests in the region and that prevented the U.S. from becoming involved in the Middle East in any way, shape or manner.

Turned Back on Israel

Because of the absence of Soviet political treaties, formal military commitments and direct commercial investments, the Russians could afford to be totally unrepresed in their dealing with Middle East countries and reversed their policies at will. This was amply demonstrated in the Arab-Israel zone. The U.S.S.R. championed the cause of Israel in 1947-49 politically by undeviating support at the United Nations and materially by permitting the sale of Czech arms to the fledgling state. Since 1953 the Russians have endorsed the Arab position at the United Nations without qualification as part of a deliberate bid for Arab nationalist favor.

The Russians finally scored a diplomatic breakthrough to the strategic nerve center of the Middle East, when Egypt, with Syria in tow, consented in 1955 to accept Soviet orbit arms. As the most vocal exponents of Arab unity, Egypt and Syria were no less dedicated than the Russians to the proposition of cleansing the Arab East of all residual Western interests. Thus Arab nationalist, and not communist, regimes were conducting pro-Soviet policies under the slogan of "positive neutralism" and carrying with them all Arab unity nationalists. And the Soviets for the first time were in the comfortable position of being able to direct their anti-Western operations in the Middle East by remote control. It was ironical that the U.S.S.R., which alone among the Great Powers engaged in imperialist expansion since 1945 and, unlike Britain and France, surrendered no territories wrested from Middle East peoples in an earlier period, should be able to sell itself in the region, particularly in the Arab sector, as the supreme advocate of anti-imperialism. Yet the United States, with no territorial ambitions—past or present—in the Middle East, seemed hardly able to take any counteraction without inviting accusations of imperialist interference.

THE EISENHOWER DOCTRINE

Prior to the Suez crisis of 1956 the United States tried with diminishing success to coordinate its Middle East policies with those of Britain and France and tended, in general, to rely on the military power of the United Kingdom in the region. Though accepting more and more financial commitments, the United States nevertheless continued reluctant to undertake military responsibilities. But the determined stand taken by Washington, within the United Nations, and beyond, against the British and French military action in Egypt destroyed the principle of coordination and in fact so weakened the prestige of the United Kingdom in the Middle East, that the United States had to move into the breach, if any Western interests were to be salvaged.

Warning to Russia

The doctrine promulgated by President Eisenhower on January 5, 1957 and approved by the Congress two months later, was designed to warn Russia and the states of the Middle East that the United States would prevent, by the use of American troops if need be, any segment of the region from falling behind the Iron Curtain. Moreover, to avoid the stigma of

imperialism that the nationalists were bound to attach to any unilateral declaration by the United States, the doctrine made it clear that American action would be taken only by invitation from a Middle East state and that American policy would be developed in partnership with the countries of the region.

But the fact remained that the immediate menace to the Western position in the Middle East did not come directly from "international communism" or Soviet aggression. Instead, it came from Arab unity nationalism under the leadership of Egypt and Syria, aided and abetted by the Soviet Union. For dealing with this kind of threat the Eisenhower doctrine furnished no adequate techniques.

Arabs Close Ranks

Furthermore, the attempts by the United States to woo Saudi Arabia, Jordan and Lebanon away from the influence of Egypt and Syria seemed likely to founder on the rock of the unresolved problems of the Arab East. When the British went to the aid of the Sultan of Muscat against the refractory Imam of Oman in mid-summer of 1957, all Arab states closed ranks. An even more dramatic demonstra-

tion of Arab solidarity was given the world at the United Nations General Assembly in the fall, when all Arab friends of the United States unreservedly endorsed Syria's anti-American position.

Thus, it appeared late in 1957 that the Eisenhower Doctrine, though a step in the right direction, hardly came to grips with

the problem. The United States was still urgently confronted with the need to find more effective means of dealing with the basic issues of the Middle East. For otherwise it was not beyond the realm of possibility that the region with its invaluable oil deposits, military bases and intercontinental communications might be lost to the West.

CHRONOLOGY OF THE MIDDLE EAST CRISIS

Suez

- 1956
- July 19 U. S. withdraws its offer to help Egypt build Aswan dam on Nile.
- 26 Egypt announces seizure of Suez Canal control.
- Aug. 21 18 nations at London conference accept Big 3 plan for international control of Suez Canal; Russia, India, Indonesia and Ceylon balk.
- Oct. 1 Suez Canal Users' Association is launched in London; 15 nations join.
- 13 Russia vetoes U. N. Security Council resolution proposing international control of Suez Canal.
- 29 Israel launches attack on Sinai Peninsula and drives toward Suez Canal.
- 30 Britain and France send 12-hour ultimatum, demanding right to put troops in Suez Canal Zone. Egypt rejects it.
- 30 Britain and France veto Security Council cease-fire resolutions.
- 31 French and British planes bomb Egyptian airfields.
- Nov. 2 Israel claims control of Sinai Peninsula and Gaza Strip in quick military victory over Egypt.
- Nov. 5 U. N. Assembly votes to organize U. N. police force to restore peace to Egypt.
- 5 British and French invade Egypt at Port Said.
- 5 Russia announces it is prepared to use force to "crush the aggressors and restore peace" in Egypt.
- 6 British and French cease fire at Port Said and halt their Suez advance.
- Dec. 28 U. N. salvage fleet begins clearing Suez Canal of its sunken ships.

1957

- Jan. 15 Egypt announces seizure of British and French banks.
- 30 Eisenhower welcomes King Saud of Saudi Arabia in hope of improving U. S. Middle East relations.
- Feb. 11 U. S. offers Israel pledges on Aqaba and Gaza if it will withdraw troops.
- Mar. 4 Israel orders its troops out of Aqaba and Gaza despite protest demonstrations.
- 6-8 U. N. troops take over Gaza Strip and at Gulf of Aqaba to neutralize areas sought by Israel and Egypt.
- Apr. 9 Ships move through Suez Canal after U. N. salvage operation.
- 24 Egypt gives U. N. its plan for exclusively Egyptian operation of Suez Canal; U. N. reluctantly accepts it (April 26) on trial basis.
- July 22 Indonesia announces it will withdraw its contingent from Aqaba and Gaza, first nation to do so. This leaves slightly under 6,000 U. N. troops on patrol to keep peace.

Jordan

1957

- Apr. 14 King Hussein of Jordan ousts pro-Communists (and pro-Egyptians) from government.
- 25 U. S. orders 6th Fleet to Middle East waters as King Hussein orders martial law to forestall Communist coup.
- May 3 U. S. 6th Fleet recalled as Jordan remains calm under Hussein.

Oman

1957

- July 20 The Imam of Oman, a religious leader, leads revolt against the Sultan of Muscat and Oman on the tip of the Arabian Peninsula.



- nism and threat to neighbor
countries.

Syria

- 7 Eisenhower warns Russia not to push Syria into Middle East aggression.

- 9 U. S. planes fly emergency shipment of arms into Jordan.
 - 13 Russia accuses Turkey of massing troops on Syrian border; warns of world war peril.
 - 27 King Saud of Saudi Arabia ends 3-day visit to Damascus and says Syria "cannot in any way constitute a danger to its neighbors."
- Oct. 13 Egypt sends troops to northern Syria to reinforce region bordering Turkey.

Country	Proved reserves, Dec. 1956 (billions of bbls.)	Participating companies	Company nationality
1. Kuwait.....	50	Gulf Oil (50%)	U. S.
		British Petroleum (50%)	U. K.
2. Saudi Arabia.....	40	Standard Oil, N. J. (30%)	U. S.
		Standard Oil, Calif. (30%)	U. S.
		Texas Oil (30%)	U. S.
		Socony Mobil (10%)	U. S.
3. Iran.....	30	British Petroleum (40%)	U. K.
		Royal Dutch-Shell Group (14%)	U. K. (40%)
			Neth. (60%)
		Standard Oil, N. J. (7%)	U. S.
		Standard Oil, Calif. (7%)	U. S.
		Texas Oil (7%)	U. S.
		Socony Mobil (7%)	U. S.
		Gulf Oil (7%)	U. S.
		Compagnie Française des Pétroles (6%)	France
		American Independent (0.55%)	U. S.
		Getty Oil (0.55%)	U. S.
		Atlantic Refining (0.55%)	U. S.
		Hancock Oil (0.55%)	U. S.
		Richfield Oil (0.55%)	U. S.
		San Jacinto Petroleum (0.55%)	U. S.
		Signal Oil & Gas (0.55%)	U. S.
		Standard Oil, Ohio (0.55%)	U. S.
		Tidewater Oil (0.55%)	U. S.
4. Iraq.....	22	British Petroleum (23.75%)	U. K.
		Royal Dutch-Shell Group (23.75%)	U. K. (40%)
			Neth. (60%)
		Compagnie Française des Pétroles (23.75%)	France
		Standard Oil, N. J. (11.87%)	U. S.
		Socony Mobil (11.87%)	U. S.
		Participations & Investments (Gulbenkian legatees) (5%)	U. K.
5. Qatar.....	1.5	Same as Iraq
6. Kuwaiti-Saudi Neutral Zone	0.65	American Independent (50%)	U. S.
7. Bahrain Islands.....	0.205	Getty Oil (50%)	U. S.
		Standard Oil, Calif. (50%)	U. S.
		Texas Oil (50%)	U. S.

ARMS AND DISARMAMENT

By GEORGE FIELDING ELIOT

MAN'S NATURE, unlike his weapons, remains unchanged.

The solution of the problem of disarmament continues to depend on satisfying one of two requirements—confidence or safeguards.

As of today, confidence does not exist between the free world and the Communist world, nor does there seem much prospect that it will come into existence at any early date. There remains, therefore, only the hope of establishing safeguards mutually acceptable to all parties concerned.

It is to this problem that the Disarmament Commission of the United Nations has been addressing itself for the past five years, ever since January 1952 when it took over the task previously attempted by the Atomic Energy Committee. Much of the work has fallen upon a subcommittee consisting of the U. S., Britain, France, Canada and the Soviet Union—and the story has been the old, old one. Agreement among the first four, based firmly on mutual confidence, has been attained on almost every question. Agreement between the four free states and the Soviet Union, in the absence of confidence, has been attained with great difficulty and after long debate on a few points, but on most of the important questions no agreement at all has been possible.

That is where the interlocking problems of disarmament and security stood in the autumn of 1957.

When the last session of the Disarmament Sub-Committee adjourned in London, early in September, 1957, it had before it a comprehensive proposal, agreed to by the four Western members, of which the provisions may be summarized as follows:

1. **Safeguards Against Surprise Attack**, by providing for reciprocal inspection of agreed areas of the territory of the U. S., other western States, the U.S.S.R. and its satellites. This inspection is to be carried out partly by aerial photographic flights, and partly by stationing teams of ground observers at critical points such as seaports, rail junctions, main highway junctions and airfields.

2. **Control of Fissionable Material** by providing that no such material hereafter produced shall be used for the manufacture of weapons, but solely for peaceful purposes (such as industrial power), and providing for an international inspection system to verify this. Further, parties now having nuclear weapons (U. S., Britain, U.S.S.R.) are to make periodic transfers of

fissionable material from weapons stockpiles to non-weapons use, thus gradually reducing the size of the weapons stocks.

3. **Suspension of Tests of Nuclear Weapons** for a period of two years, with extension of this period provided for if the rest of the program is then making satisfactory progress.

4. **Space Missiles** to be controlled by appointment of a technical commission to draw up plans which will provide that the sending of objects through outer space shall be only for peaceful and scientific purposes.

5. **Reduction of Conventional Armed Forces** by agreed limitations on manpower and reduction of weapons stocks.

6. **International Control** of the carrying out of all provisions of the agreement by a suitable international body.

These proposals were presented as a "package," the various parts being considered as interdependent.

They were rejected by the Soviet representative as a "sham" and as "containing nothing of value."

Study of the proposals, and of official Soviet and western comment thereon, reveals these areas of difference:

1. The U.S.S.R. accepts the idea of aerial inspection in principle, but differs with the West as to the areas to be subject to such inspection. One Soviet proposal provided for inspection of most of Western Europe and some of the satellite areas, plus the eastern half of Siberia (largely non-industrial and including military installations of importance only on the Pacific Coast), and finally the western half of the Continental United States (an area of the highest military and industrial significance, including the bulk of our nuclear and missile production and research installations). The U. S. has made various counter-proposals—one to include the whole of U. S. and Soviet territory, Western Europe and outlying base areas; another—a try-it-out plan—to include only the Arctic region and certain adjoining areas, across which air attacks might be delivered. These the U.S.S.R. has rejected. Differences also exist as to the degree of freedom of action and access to installations, etc., to be allowed the proposed ground observers.

Comment: The Soviet maneuvers seem directed toward trying to gain an advantage commensurate with the advantage that the West would gain by being able to

"fix" precisely the location of many places and installations in Soviet territory. Maps of the U.S.S.R. available in the West are notoriously inaccurate, whereas maps of the greatest precision are available to them covering all Western nations. Safeguards against surprise attack nevertheless remain the most important single point under discussion: if this could be achieved, an atmosphere of returning confidence might eventually result in which further progress would become possible.

2. Control of fissionable material, as proposed, has met with no Soviet favor whatever.

Comment: Some Western observers believe that the Soviets are reluctant to "freeze" weapons stockpiles at present levels, leaving the West with a considerable superiority.

3. The Soviets have repeatedly demanded unconditional stoppage, forthwith, of weapons tests, but they refuse to link this with any stoppage of weapons production, as the West demands.

Comment: One Soviet purpose may be to check further U. S. testing of tactical atomic weapons, which threaten to overshadow the present Soviet advantage in land-force manpower. They are also undoubtedly seeking a propaganda advantage, in view of the world-wide anxiety as to the injurious effect of "fall-out" from these tests.

4. The U.S.S.R. has derived very great propaganda advantage from being the first nation to produce a successful space-flying artificial satellite. While the satellite itself is a research vehicle and not a weapon, it was produced as a by-product of the Soviet missile program. It indicates that Soviet development of space-flying missiles is somewhat in advance of the U. S. program at this time. Whether the U.S.S.R. will, in a position at least of temporary advantage, be willing to agree to any prohibition of the use of outer space for military purposes is questionable. It seems more likely that, while exploiting their propaganda advantage to the full, they will press on with their missile program and may well impose on the U. S. the necessity of vigorous and costly counter-efforts in the same direction.

If, however, negotiation should prove possible in this field, an agreement to confine the exploration of outer space to peaceful and scientific purposes would prove of lasting benefit to mankind as a whole. The technical means to detect any violation of an agreement to stop testing space-flying missiles exist. Without tests, further development of such missiles could not continue. This would mean that space-travel and inter-planetary research would become the province of an international

scientific body, confining war to the limits of the earth's surface and its atmosphere.

5. The Soviets have repeatedly agreed to manpower reductions in the armed forces of the major Powers, though the precise character of the safeguards they would accept remains unclear.

Comment: Doubtless the Soviets, like others, would like to release additional manpower for industry and agriculture. Doubtless, also, they anticipate some reduction in their oversized ground forces may be necessary as a result of expansion of their air and naval forces, and may be acceptable because the increased fire-power of nuclear weapons prohibits mass tactics on future battlefields. The reorganization of land forces for use of nuclear weapons is explained at the end of this article.

It should be kept in mind that the Soviet reserve system is much more highly developed than that of most other states, so that they can recall men for military service more quickly than others.

Summing up these various considerations, the great unresolved question seems to be this: Can any agreement to limit armaments be reached under conditions which will make a real contribution to peace and security, in the total absence of confidence between the free and the Communist world-blocs?

The outlook appears gloomy. Yet the hard fact remains that the Soviet leaders know they have no real hope of realizing their dream of world domination save at the cost of a war of mutual destruction. Short of that, they as well as we must continue to live in fear and to bear the awful economic burdens of mounting arms expenditures. The increase in the cost

Defense Expenditures of the Great Powers

(in millions of U. S. dollars)

Country	1937	1951	1956
United States....	937	22,306 ¹	39,968 ¹
British Empire ² ...	1,263	3,851	6,435
France.....	909	2,517 ³	3,723 ³
Germany.....	4,000 ⁴	1,106 ⁵	2,300 ⁶
U.S.S.R.....	5,026	24,094 ⁷	24,450 ⁷

¹ Includes military aid to foreign states, atomic energy program and stockpiling of critical materials. ² British Empire (incl. India) 1937; 1951-56 United Kingdom, Canada and Australia. ³ At official exchange rate—350 francs = \$1 U.S. ⁴ Estimated. ⁵ Occupation costs (West Germany only). ⁶ West Germany only (incl. occupation costs). ⁷ At official exchange rate—4 rubles = \$1 U.S. Does not include atomic energy program and other military production costs. Accurate figures not available.

of weapons extends not only to nuclear armaments and long-range missiles, but to every category of weapon. Armies, navies, air forces have all become dependent on complex and expensive machines and equipment. With this increase in the cost of weaponry comes an accompanying increase in the cost of the skilled manpower required to operate and maintain the weapons. The day of cheap "cannon fodder" is over. Today, the armed forces must—at least in the free countries—compete with private industry for the services of skilled technicians and adjust their pay scales and conditions of service accordingly. Even the Soviets, with better control over individuals, are under severe internal pressures, arising from the desire of their people for better food, clothing, housing, the decencies and amenities of life. All this being so, it is too soon to despair of eventual agreement on easing the arms burden—as an acceptable alternative to the prospect of mutual suicide or mutual exhaustion and economic collapse.

Confidence is still lacking. In the international sense, it is in any case a slow growth. But increased security, with safeguards, is far from impossible if all truly desire it.

Armies of major powers are being reor-

ganized for the new tactics involved in the battlefield use of nuclear weapons. This necessitates: (1) smaller units; (2) wider dispersion, hence better communications; (3) greater mobility, with increased dependence on air supply. The basic purpose is to avoid creating large targets for hostile nuclear attack. The U. S. Army has made greater progress in developing nuclear weapons for army use than have the other two nuclear powers (Britain and U.S.S.R.).

The nuclear reorganization of the U. S. Army (begun 1957, to be completed in the Regular Army in 1958) is known by the term *Pentomic*—from "Penta" (five) and "atomic." It features commands of five sub-units instead of three as formerly, providing greater flexibility.

TYPES OF DIVISIONS
(U. S. Army—1957 "Pentomic" Plan)

Type	Total Personnel	Infantry Soldiers (approximate)	Tanks	Guns	Missile Launchers
Infantry	13,748	7,000	122	66	2
Armored	14,617	4,000	343	70	2
Air-borne	11,486	8,000	None	45	4

DEFENSE POSTURES OF LEADING POWERS

The defense frontiers of the United States have been extended to many parts of the world and this factor creates the need for greater expenditures for armaments and the armed forces.

The armament needs will change with the development of nuclear weapons and

missiles but, until the transition of the armed forces to nuclear status is achieved, we believe that you will be interested in the present comparative military strength of the Western world powers and the Communist world powers. The tables and text following, provide this information.

Armed Forces of U. S. and United Kingdom

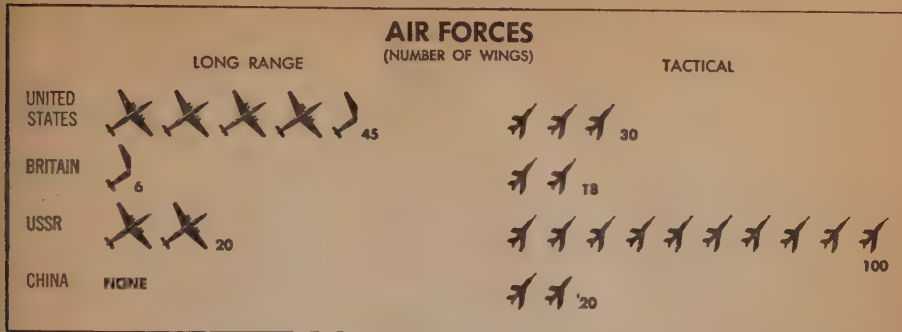
Country	LAND FORCES		AIR FORCES			NAVAL FORCES		
	Divisions		Wings		Air Defense (capability)	Long Range Striking Forces (attack carriers)	Submarines (ocean-going)	Anti-submarine Defense (capability)
	Active	Reserve	Long range	Tactical				
United States.....	19	37	45	30	Good	21	200	Good
United Kingdom.....	9	12	6	18	Good	6	60	Good

The defense system of the free world is built around the mobile striking power of the United States, operating from the continent of North America. It includes these elements:

1. **SHIELD FORCES** of ground troops plus tactical air power designed to hold

off Communist attack at the various points of contact until reinforced. These may be furnished by the countries immediately concerned, or may (as in Germany and Korea) include U. S. or other allied forces.

2. Control of the sea and overseas air-lanes (including their defense against



Soviet submarines, aircraft, etc.) to provide prompt **REINFORCEMENT** of any threatened free nation from the U. S. or other allied territory.

3. The **DETERRENT** power of U. S. (and British) long-range air and sea striking forces, designed to prevent the U.S.S.R. from initiating full-scale nuclear war by presenting an unacceptable risk of nuclear retaliation and to defeat such an attempt should it be made.

4. **AIR DEFENSE** of the allied nations, their bases and military installations.

The basic characteristic of the free-world defense system is *mobility* (i.e. freedom of movement by land and sea, outside the Communist area) and in its operation, *time* may well be the most important

factor. The forces of the Communist states are relatively immobile, except as they can develop a capacity for surprise nuclear attack with planes and missiles. Thus the Communist states (especially the U.S.S.R.) are compelled more and more to use the threat of such attack as the principal military support of policy, and the character of Soviet armament is changing accordingly—notably in the development of intermediate and long-range missiles.

The defense system of the free world must continue to be capable of dealing with local or limited aggression, and of deterring or defeating total aggression. Its end purpose is to prove to the Communist leaders that armed aggression of either type is not going to be profitable.

Armed Forces of U.S.S.R. and China

Country	LAND FORCES		AIR FORCES			NAVAL FORCES		
	Divisions		Wings		Air Defense (capability)	Long Range Striking Forces (attack carriers)	Submarines (ocean-going)	Anti-submarine Defense (capability)
	Active	Reserve	Long range	Tactical				
U.S.S.R.....	160-200	175-225	20	100	Medium	0	275-300	Poor
China (Communist)	116	†	0	20	Poor	0	4-12	Poor

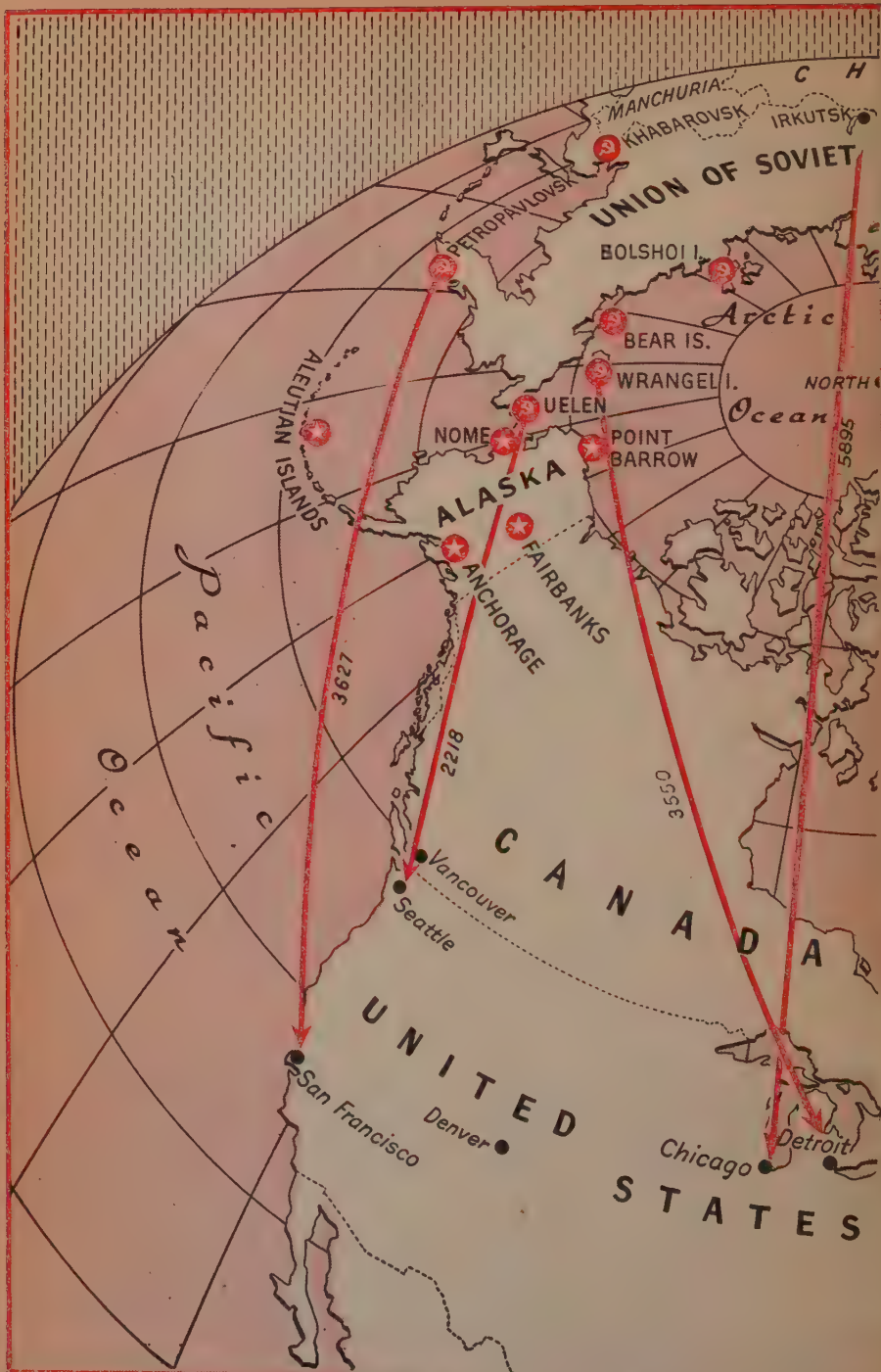
The Communist countries (U.S.S.R., Red China and satellites) occupy a solid territorial bloc which includes most of east and east central Europe and the greater part of Asia. They have very few islands (except along their coasts), no overseas possessions and limited access to the world's oceans. Around the perimeter of their huge land area they are in direct contact with many free nations, most of which are associated with the U. S. in defensive alliances.

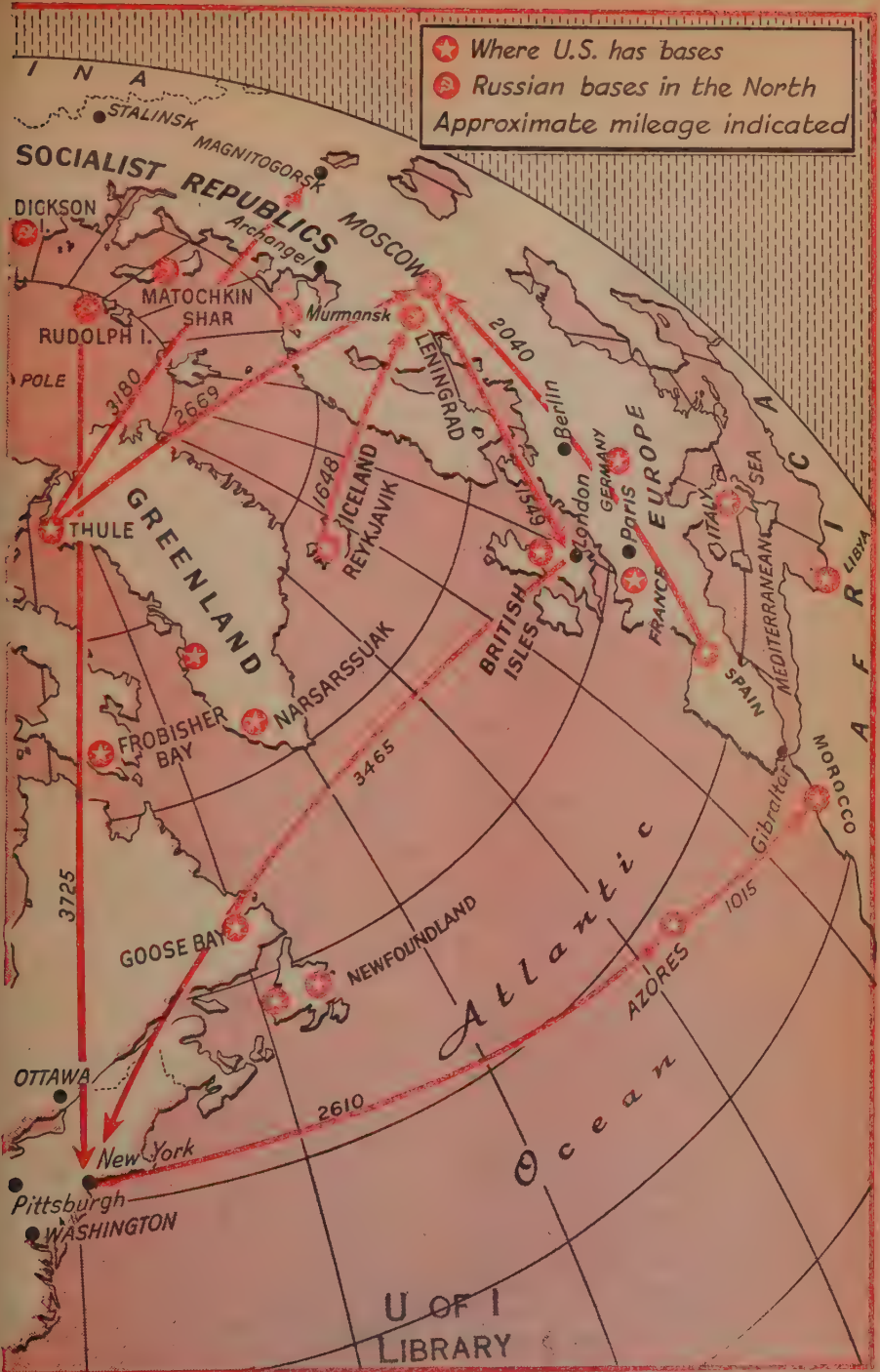
Communist policy requires large land forces, supported by strong tactical air forces. These are needed partly to maintain a continuous threat against free

neighbors, partly to control their own and satellite populations. The U.S.S.R. also has a long-range air force of medium strength, its sole means of offering a direct threat to the U. S.; this force may become more dangerous in the future due to the development of very long-range missiles. The Soviet navy is limited to elements suited for denying the use of the sea to the free states, but not for controlling it (submarines, mines, surface raiders).

The military power helpful to the free world is, of course, augmented by the United States and other nations outside the Communist orbit.

A table of these armaments is listed in the table "Military Alliances" on page 52.





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Military Alliances

(forces actually present in area only)

Alliances	LAND FORCES		AIR FORCES	
	Active Divisions	Reserve Divisions	Tactical Wings	Air Defense (capability)
North Atlantic Treaty Organization (forces under Supreme Commander, Europe):				
Europe, Western front.....	28	21	64	Medium to good
Europe, south & southeast (incl. Turkey).....	26	29½	11	Poor
Total NATO (Europe).....	54	50½	75	.....
Baghdad Pact (Turkey, Iraq, Iran, Pakistan & British forces in this area).....	26	16	10	Poor
U. S. & Allies in Far East & Pacific:				
U. S. (in Korea, Japan, Okinawa, Hawaii).....	4	—	8	Good
Republic of Korea.....	20	10	6	Good
Japan.....	6	—	3	Medium
Nationalist China (Formosa).....	15	?	6	Good
Australia.....	¾	5	5	Medium
New Zealand.....	—	2	2	Medium
Philippines.....	2	?	Small	Poor
South Vietnam.....	3	?	Small	Poor
Thailand.....	2	?	Small	Poor
Britain (Hong Kong, Singapore, Malaya).....	1¾	—	4	Medium
Total.....	54	17	34	.....

DISARMAMENT TALKS REVIEW

- 1947
- Feb. 13 United Nations Commission for Conventional armaments created. (It accomplished nothing.)
- 1951
- Dec. 17 U. N. General Assembly voted to set up a new Disarmament Commission which would deal with both atomic and conventional weapons. It had 12 members—nations on the Security Council plus Canada. (It got nowhere.)
- 1953
- Nov. 28 U. N. General Assembly set up a Disarmament subcommittee consisting of U. S., U.S.S.R., Great Britain, France and Canada.
- 1956
- Nov. 17 Russia accepts principle of aerial inspection zones, but does not define them.
- 1957
- Jan. 14 U. S. gives U. N. new 6-point plan for arms reduction.
- Mar. 18 U. N. Disarmament subcommittee starts new negotiations in London. Russia and West agree in principle to reduction of armed forces.
- 18 Russia proposes withdrawal of Atlantic Pact and Warsaw Pact forces from foreign soil and liquidation of all foreign military bases.
- June 25 U. S. offers 3-stage reduction in armed forces to below 2 million if Russia will do likewise.
- July 2 U. S. proposes a 10-month moratorium on nuclear weapons tests, provided that there is inspection.
- Aug. 2 Dulles proposes reciprocal air inspection of all continental U. S. and all Russia.
- 21 U. S. offers to halt nuclear weapons tests for 2 years.
- Sept. 6 U. N. disarmament talks in London recess indefinitely in deadlock after 5½ months.
- 19 Dulles brings disarmament debate into U. N. General Assembly.

WEAPONS DEVELOPMENT

By WILLY LEY

THE MAIN CHARACTERISTIC, and limitation, of firearms of the past is summed up nicely in the sentence that a miss of an inch is as good as a miss of a mile. The old solid iron cannon ball was a powerful projectile, but only if it hit. The same held true for musket balls and rifle bullets. However, the main aim of weapons development during the last half century has been to convert a miss, at least a near-miss, into a hit.

This could be accomplished in two ways, both of which were used. One was to fire with such rapidity that the bullets formed a kind of spray in the expectation that at least one of them would score a hit. In the most modern applications of this principle this has been carried to incredible lengths. There are now machine gun clusters for fighter aircraft which can fire several thousand bullets per minute, or at least could do so if the plane could carry enough ammunition. During a demonstration, where every bullet used was a tracer bullet, a ten second burst from this machine gun cluster looked like an enormous swarm of luminous beetles racing down the firing range.

The other method of converting a miss into a hit was to fire explosive shells which produced an *area* of destruction instead of a *point* of destruction as did solid shot. In the specific and difficult case of shooting at a fast moving target, such as an airplane, one additional answer was thought up, developed and used during the second World War. This was the "proximity fuze" or VT fuze (V.T. standing for "variable time") which accomplished spectacular results on many occasions. The working principle of the proximity fuze is both simple and somewhat incredible: the nose of the projectile is a tiny radio transmitter and receiver.

As the anti-aircraft shell rises the transmitter begins working. It was started by the hard push the shell received in the gun barrel. The transmitter sends out a steady weak radio signal. When the anti-aircraft shell passes an airplane this signal is reflected by the wings and fuselage of the plane. The shell catches the reflection which, of course, is the stronger the nearer the reflecting plane. If the reflection is strong enough the shell's fuze explodes, exploding the main high-explosive charge of the shell in turn. The shell splinters and the shock wave of the explosion are certain to put the plane out of action. Naturally the proximity fuze can be "set" for a certain dis-

tance. If the shell is a comparatively small shell the fuze may be set to explode only if the reflecting object is less than 20 yards away. A larger shell's fuze might be set for 30 yards. It goes without saying that the proximity fuze, though originally developed for anti-aircraft artillery, is now used for all kinds of anti-aircraft missiles, whether they are fired from the ground against airplanes or by other airplanes. Even a guided missile might still miss by a few yards; it is the proximity fuze which converts this near-miss into a destructive hit.

The atomic (plutonium) bomb and the hydrogen fusion bomb are, from this point of view, just very large extensions of the principle of the exploding shell, or bomb. The very heaviest bombs used during the second World War were popularly known as block busters which is a rather good indication of their destructive area. It amounted to nearly one city block, provided, of course, that the buildings on this area were wood or masonry buildings without steel skeletons. Atomic and hydrogen bombs have extended the destructive area to that of a small or medium sized city and in the case of the hydrogen bomb it is theoretically possible to make the area of destruction as large as seems necessary.

Everything that has been said so far referred to the weapons themselves, but this is only one aspect of the whole picture. In order to do its job the weapon has to be delivered. So far delivery has been simply by airplane, by large bomber, with the pilot trying to dodge enemy anti-aircraft fire from the ground as well as he could, while the gunners tried to take care of enemy fighter aircraft. The airplane—except for the fact that it could be attacked in turn—had two advantages over delivery by artillery. In the first place the heaviest artillery shells weigh about a ton, while a large airplane could carry several tons of bombs. In the second place the airplane could "deliver" over a range of many hundreds and even thousands of miles. In land warfare artillery was rarely used for ranges of over 12,000 yards. In naval battles firing has occasionally been started over more than twice this range but for ranges over 20 miles guns are not practical. During the first World War the Germans developed an artillery piece (the so-called "Paris Gun," often called Big Bertha because of an early misunderstanding on the part of the French) with a range of 80 miles but

with a caliber of only 8 inches. In the second World War the Germans followed this up with a gun of a range of 110 miles (same caliber). The Paris Gun caused a sensation while its successor of the second World War remained unnoticed.

Near the end of the second World War the long range missile became another means of delivery. It appeared in the two forms of the flying bomb V-1 and the long range ballistic rocket V-2. The V-1 was actually an unpowered airplane of about the size of a fighter plane—test models were actually flown by pilots—propelled by a simple jet engine. It climbed to the height for which its automatic pilot had been set—usually 2,000 feet—and then followed a straight course toward the target (London). After flying for 150 miles the fuel flow to the engine was cut, the control surfaces were automatically locked and the V-1 dived into the ground, exploding on impact. The missiles of the type first demonstrated by the V-1 are now known as "flightpath missiles" or "cruising missiles." They have grown larger and faster and increased their range from 150 to over 4,000 miles (for example the Air Force's *Snark*) but they still are really pilotless aircraft. For this reason they are vulnerable to interception just like a manned airplane. In fact they are somewhat more vulnerable because a human pilot can try to dodge.

This vulnerability is greatest when most of the flightpath leads over land; the enemy can have anti-aircraft batteries, guided missile emplacements, and interceptor airfields almost anywhere. If the flightpath leads mostly over water the vulnerability is lessened because nobody can have enough ships at sea to produce a really "airtight" interception.

The long range ballistic missile presents an entirely different picture. These rocket missiles take off vertically, then turn in the direction of the target and throw themselves into an arc which leads out of the atmosphere and ends up on the target. Even the fastest flightpath missile needs several hours to cross the Atlantic Ocean, a ballistic missile will do it in about 50 minutes. When this was contemplated at first it looked as if a long range ballistic missile would be the "ultimate weapon." This thought was strengthened by the wartime experience with the V-2 rocket. The V-2 rocket had a range of about 200 miles and needed a little less than six minutes to crash into the target, counting from the instant of take-off. Even though such V-2 rockets, en route to the target, could be and often were, caught on radar screens, there was nothing anybody could do about it. No defensive weapon could reach 50 miles up and from

detection to impact there were only about two minutes left.

With the intercontinental missile, because of their very range, things are different. A radar defense especially geared for their detection, might "catch" them some 20 minutes before impact. This is enough time to compute the trajectory of the missile, from which it cannot deviate by the laws of Nature, and for throwing a few dozen anti-missiles into its path. One such anti-missile missile is now under development.

In military reasoning the advantages are almost never on one side only. The ballistic missile of comparatively short range won't be intercepted in flight but has to be brought into range first and whatever brings it into range is likely to be intercepted. The very long range missile can be intercepted in flight, but does not suffer the logistic drawback of long transportation. It could be fired, so-to-speak, from the backyard of the factory which makes it. In reality the enemy would be able to track back to the factory quite soon even if he does not know its location from the outset.

There is still one possible trick which could be used with flightpath missiles. They could take off from the factory's backyard but could first be flown several hundred miles in almost any direction over friendly territory at very low altitudes. Only when they cross the border of friendly territory would they start out on their real mission. The trajectory of a ballistic missile could not be disguised in this manner. It would have to be shipped by land, or possibly by air transport, to ever changing firing sites.

While the weapons development over the last half century or so has done a great deal to convert misses into hits it has also resulted in a steady decrease of the number of actual fighting men. In the Napoleonic wars probably half of all the soldiers in uniform actually fought at one time or another. During the first World War this number was down to about ten per cent. For the second World War it has been estimated that it needed 98 men in uniform just to equip and to supply two fighting soldiers. Of course the percentage cannot very well go much lower than that—but what kind of men will these fighting men have to be?

No, they don't have to be scientists, all the actual brain work has been done in designing, testing and planning long before the fighting man is handed a piece of equipment. But he has to be trained in its use and he should, as far as possible, be able to understand the principles of his equipment and his weapons. Compared to a soldier in Napoleon's army he will be a highly educated man.

FOREIGN POLICY OF THE UNITED STATES AND THE U.S.S.R

By LOUIS M. HACKER, WILLIAM C. THOMAS, JR.,
and RAYMOND A. MOORE, JR.

FOREIGN POLICY OF THE UNITED STATES

IT WOULD BE UNREAL and also fatal to assume that American foreign policy is shaped from day to day and largely as a counterthrust to Russian foreign policy. On the other hand, the United States does not seek to impose on the world a *Pax Americana*—under which we ourselves would guarantee the peace at the same time that we extend our sway by economic and other means.

American foreign policy is based on the active faith that democratic institutions and the benefits of a free-enterprise system, as they spread everywhere, will assure peace, stability and growth. From their own experiences, Americans are ready to assume the falsity of the Marxist-Leninist prediction of the collapse of capitalism. Capitalism, instead of producing misery, crises and class war, has virtually eliminated classes, created devices for controlling the sharp swings of the business cycle, and is constantly advancing standards of living. All this has been accomplished in a climate of freedom. There are, in short, values and commitments which are real and stable and to these the United States adheres; at the same time their implementation must meet the changing needs of the give-and-take of international diplomacy.

Safety Through Defense

Always, the chief function of United States foreign policy, as with that of any state in mid-twentieth century world society, is to preserve the independent existence of the nation—its territory, its people, its institutions and its way of life. To achieve this fundamental goal, a secure international environment is required—the protection of the land, sea and air approaches to the United States becomes a necessity.

We have defenses against air attack through the maintenance of military bases in Greenland, Iceland, the Aleutians and even Antarctica and against sea attack by the establishment of bases in the Atlantic and Pacific Oceans and in the Caribbean Sea. The military and foreign policy arms of the government make commitments accordingly. The survival of the nation requires the countries of the Western

Hemisphere to come to the defense of any member nation attacked from inside or outside this region.

Because the security of the Western Hemisphere may not be sufficient protection for the United States, the defense frontiers have been extended to other areas where the dominance by an unfriendly country, such as the U.S.S.R. or Communist China, would threaten to upset an existent balance of power and so jeopardize the security of the United States. The Truman and Eisenhower Doctrines extend a shield of military protection to such vital areas as Greece, Turkey and the Middle East, where the countries concerned have requested, or should request, such aid.

In essence, then, the United States, for the sake of its own security, must seek to preserve a favorable balance of power in the Western Hemisphere and to maintain the existence of a balance in Europe and Asia which will deter the U.S.S.R. and Communist China from establishing hostile hegemonies. It continues to use all means, including the willingness for putting out "brushfire wars," to prevent such developments.

Because the power of the United States is limited by its being only one, although a large and powerful one, of some ninety nations in the world today, the government has allied itself with like-minded governments to seek more effective implementation of its policies. For this reason the United States has been instrumental in the creation of such organizations as the North Atlantic Treaty Organization (NATO), the South East Asia Treaty Organization (SEATO), the Anzac Pact with Australia and New Zealand, and the Baghdad Pact, as well as the Organization of American States (OAS), which protect the United States as well as other member states against the danger of an armed attack.

Also, major foreign aid programs such as the Marshall Plan and the present International Cooperation Administration seek to enhance United States security as well as to extend and preserve economic and social conditions conducive to freedom.

To Help Free Peoples

Although the protection of the independence and security of the nation constitutes the most fundamental aims of United States foreign policy, they are by no means the only ones. Other, more positive goals—the preservation of peace, the extension of democracy and freedom, the economic advancement of the free world and the promotion of general commerce—take on added significance once the minimal goals are partially realized. Those aspects of foreign policy mentioned in connection with the minimal goals do, of course, often promote more positive aims as well.

To further these intentions, the United States supports international economic agencies—the World Bank, the International Monetary Fund, the technical assistance programs of the United Nations, reciprocal trade agreements, the General Agreement on Tariffs and Trade, and some 150 other organizations concerned with regulating and promoting commerce. It seeks to expand the world economic community where a greater mobility of trade, capital movements and labor will be achieved.

Its programs of aid for allies and friends have often been primarily for economic improvement rather than military aid—twenty billion dollars to Western Europe between July 1, 1945, and September 30, 1950, for example. Aid programs have become, the President of the United States has said, “an integral part of our foreign policy.” At the same time, private American capital is encouraged to expend its investments abroad and, in the process, help in the opening up of new resources and the creation of industries through which native standards of living will advance.

American foreign policy, in brief, encompasses the assumption that the continued economic progress of free peoples will be the strongest possible force for peace and stability.

The more positive goals of the United States foreign policy are further advanced by the government's participation in the United Nations, which it recognizes as an indispensable, if somewhat fragile, agency in the preservation of peace. Experience has demonstrated that the purposes and methods of this international organization coincide to a substantial extent with the major outlines of this country's policy.

While it has not been as effective as America desires, it has proven useful as an instrument for checking expansionist tendencies in such places as Korea and Indo-China, for dampening controversies such as the Egyptian-Israeli disputes, and for focusing public condemnation upon

the oppression visited upon Hungary in 1956. The positive goals are also furthered by the advancement of President Eisenhower's program of harnessing nuclear power to an “Atoms for Peace” agency within the United Nations; by the dissemination of information through the United States Information Agency; and through efforts to expand cultural exchanges with Communist countries in the belief that exposure to American institutions and ideas will shake the certainty of the scientists, industrial managers and educated classes generally of the Communist world.

The Clash of Economies

The achievement of the goals of American foreign policy in the mid-twentieth century demands that domestic tranquility be maintained within the United States with a relatively high degree of unity behind the broad policies of the government. An expanding economy of high employment is requisite as an adequate defense establishment prepared for both general and limited war.

One of the chief problems of United States foreign policy, besides the maintenance of unity and prosperity at home and among its allies, involves its relations with the Sino-Soviet bloc of nations. These nations, especially the Soviet Union and Communist China, constitute a major threat to the security of the United States because of the fusion of a hostile revolutionary doctrine of Marxist-Leninist Communism with the enormous power of the Russian and Chinese states. Further, the U.S.S.R. is capable of producing nuclear weapons of unprecedented power and intercontinental ballistics missiles. This is augmented by the strength of historic Russian and Chinese nationalism which would constitute problems for America today even without Communist ideology.

Leaders of the Soviet Union regard the “principal characteristics of our epoch” as “the emergence of socialism from the confines of one country and its transformation into a world system.” They declare that “capitalism has proved impotent to hinder this world wide process.” Such sentiments, harnessed to a population of over 215 million on an area three times the size of the United States, with the second largest industrial capacity of any nation—plus the largest standing army in the world, constitute alone a major challenge to America. But, joined by Communist China, which has a population of 600 million on over four million square miles of land and an army of four million plus six to ten million in active reserves, the challenge is compounded.

Coupled with this problem have come the colonial revolutions in Asia, Africa and

the Middle East. Nationalism in these areas has often been utilized and exploited by Communists for their own purposes. The United States looks at the risings of these natives of undeveloped areas with a sympathy rooted in the memories of its own origins. But, the problems of encouraging and aiding these justifiably impatient peoples to acquire the stability

and strength they need to preserve the independence, freedom and economic gains they desire so greatly—and yet to have friendship for the United States—are incredibly complex.

How the United States resolves these problems, among others, will determine the success of its foreign policy for the remainder of the century.

FOREIGN POLICY OF THE U.S.S.R.

THE FOREIGN POLICY of the Soviet Union is conditioned principally by the physical facts of her existence, the historic policies of the Russian State and the joining of Marxist-Leninist doctrine to these factors.

As the greatest landlocked empire in history, the Soviet Union covers eight million square miles—one sixth of the earth's surface. It is a land rich in resources: coal deposits are estimated at a billion and a half tons; oil reserves are undoubtedly very large; and there are large deposits of strategic minerals. The Soviet Union comes closer to achieving self-sufficiency than any other nation, excepting perhaps the United States. Her population of approximately 215 million shows an annual increase of more than 3 million and has a young median age (23). Joined with Communist China and the Soviet satellites, the Soviet Union represents over one half of the world's people.

The Soviet economy is second only to that of the United States and has shown, except in the agricultural sector, high rates of increase in the post-war years. From 1947 to 1953 its gross national product grew at the approximate rate of 7 to 8 per cent, with 12 per cent in industrial growth, while the figures for the United States are $4\frac{1}{2}$ to 5 per cent and 5 per cent respectively.

The Soviet Union maintains the world's largest standing army—some 2,500,000 with reserves of 6,000,000. Her navy is now the world's second largest and her submarine fleet is actually the largest. In quantity and quality the Soviet Air Force rivals that of the United States and its production of missiles (intermediate and long-range) is considered by many competent authorities to be slightly in the lead. She has exploded both atomic and hydrogen bombs, but her production lags behind that of the United States. Militarily she excels in manpower, lacks firepower, but is making rapid strides to compensate for this lack. The implications of such facts are, of course, that Soviet foreign policy can be strong and is indeed something to be reckoned with.

On the other hand, there are physical

limitations which she must face. Russia's state in 1917 was almost a feudal one. Most western countries have at least a hundred years' head start on her in economic and social development. Moreover, she is in much less of a position than the United States to produce both guns and butter. As members of her population become more educated—and to become an advanced technological nation Russia must educate more and more people—they demand higher standards of living. Her leaders more and more are compelled to promise an increase in consumer goods; this imposes limits on expenditures for arms.

Czars to Commissars

Besides the conditioning factors of physical realities, the foreign policy of the Soviet Union today manifests in many ways the characteristics that Russian foreign policy has had for centuries. Such policy was made up of alternations of expansionism and isolationism, of contact and imitation of the West with withdrawal and suspicion of the West, of a balance of power and regional hegemony, and of spheres of influence and collective security.

Specifically, Russian national policy sought:

Warm water ports to the South in the Bosphorus and the Dardanelles;

Windows to the West in the decaying Ottoman Empire;

A security belt in Eastern Europe;

Windows to the East in Siberia, Outer Mongolia and the Maritime Provinces.

Modern Soviet policy has abandoned none of these goals.

Since the October revolution of 1917, there has entered into Russian policy an element—Marxist-Leninist doctrine—which not only supports these traditional nationalistic Russian aims but goes beyond this to have an impact at the outer periphery of the country's national interests. The fusion of the Communist ideology and the historic aim is so complete that it is difficult to tell where one begins and the

other leaves off, especially in those areas contiguous to the Soviet Union and those impinging on Soviet vital interests. At any rate, the doctrine has proven to be a powerful force. It teaches that world society, functioning under the "laws" of "dialectical materialism" or "historical materialism," has reached a stage under which capitalism, having performed its historical mission, is doomed.

The capitalist countries, according to this ideology, must collapse for the following reasons:

- 1) Their peoples are sharply divided into rich and poor;
- 2) The means of production are concentrated in the hands of great monopolies;
- 3) The working classes are being reduced to a condition of increasing misery;
- 4) At the same time, crises or business depressions occur more and more frequently;
- 5) Class wars are now in the open, and they must lead to revolution.

History, in short, according to Marxist-Leninist doctrine, is on the side of the Russians and sooner or later capitalist countries will collapse because of these "laws" of their development and decline.

In its ideological perspectives, the Soviet Union's foreign policy strives to achieve its major objectives of spreading Communism throughout the world in general and of hastening the collapse of capitalistic countries in two ways:

- 1) It is the center and inspiration of the Communist conspiracy by which native Communist parties preach the theory of "class war" to create dissatisfaction among working classes. Such infiltrations are particularly effective among colonial peoples and those of new countries where advances in standards of living must perforce be slow (India, Indonesia, Northern Korea);
- 2) It is constantly seeking to keep the world in turmoil so that the western powers and their allies will be forced to diffuse their strength to keep Communist advances contained or to prevent their spread. Since the end of World War II, Russia has made it a practice to probe at such "soft spots" as Korea, Vietnam, and, currently, Indonesia and the Middle East.

Russia's Goals

Since 1917, after having gone through a number of stages of retirement from and co-operation with the western world, the Soviets more recently have adopted a nationalist outlook.

Today, the Russian vital interests in-

clude, first, the survival of the Mother Land of Socialism—its peoples, institutions and the Communist way of life. Secondly, they include security policies involving an Eastern and a Western zone. On the west are the deferential but increasingly restive and unstable satellite governments. On the east there are large neutral areas and China, a friendly and dependent ally though possibly a rival ultimately. Beyond these security zones, the foreign policy of the U.S.S.R. seeks, at minimum, a balance of power in Europe, a friendly neutral or disarmed Japan and Germany, access to the North Sea, the Mediterranean and the Pacific Ocean, and spheres of influence in the Middle East, South East Asia, Africa, Arctic and the Antarctic.

In sum, the Soviet Union embraces a long range goal of a Communist world, a middle range goal of a balance of power with capitalist states. Since the means employed to achieve these goals are flexible, realistic, ruthless and dynamic, the Soviet Union, particularly when joined with Communist China, the satellite nations and the world-wide Communist parties, presents an imposing picture of power ready and able to defend and advance its interests by both military and ideological tactics. That these tactics have enjoyed considerable success is one of the major facts of our time, causing great concern and defensive responses by large areas of the non-Communist world.

Since 1939, the Soviet Union has annexed some 400,000 square miles of territory, established controls over Eastern Europe, including Eastern Germany and Albania, seen the triumph of Communism on the Chinese mainland and in parts of Korea and Vietnam, and has extended its influence (through local Communist parties) in India and Indonesia. Egypt and Syria—by large arms shipments—have been brought into its sphere of influence.

Although it has been remarkably successful since World War II, it has met with effective resistances from the North Atlantic Treaty Organization, the Organization of American States, the force of the United Nations in Iran and Korea, the defeat of the Huks in the Philippines and of the Communists in Malaya.

Actual defeats have been suffered by the defection of Tito, the Berlin Air Lift and the revolts in Poland and Hungary.

Since Stalin Died

Since the death of Stalin, March 5, 1953, Mao-Tse-tung has emerged as senior spokesman among Communist leaders; and a struggle for succession in Russia in many ways similar to that following Lenin's death in 1924, has followed with Khrushchev emerging as the first among

equals—in part due to the increased power of the Soviet Army represented by Marshal Zhukov who seems to have sided with Khrushchev.

The appearance of new leadership in the Soviet Union has pointed up problems of Soviet agriculture, rigid centralized economic planning, the secret police,

forced labor, and the pressures of a rising Soviet managerial class. It has also recast Soviet tactics into more flexible lines so that Soviet policy can still pursue Communist aims in a world of stalemated nuclear powers where the competitive coexistence of cold war goes on and yet does not threaten a general war.

For new developments, see pages 18-19.

MAJOR U. S. POST-WAR POLICY DECISIONS

The Marshall Plan

After World War II, recovery programs among the nations of Europe, as well as contributions from the United States, were unco-ordinated. In June 1947, Gen. George C. Marshall, then Secretary of State, asserted the need for integrated recovery efforts against "hunger, poverty, desperation and chaos." Congress, April, 1948, appropriated \$5.4 billions. The United States established the Economic Co-operation Administration while European nations set up the Organization for European Economic Administration. Under a system of counterpart funds, each participating government set aside in its own currency amounts matching the aid it received. As the European Recovery Program, Marshall Plan aid was economic in its early stages but with the worsening international situation—particularly after Korea—emphasis was shifted to rearmament. When ERP ended in Dec. 1951, a year ahead of schedule, it had cost \$11 billion but substantial amounts had been committed to collateral military ventures.

Truman Doctrine

President Truman took a decisive step in March, 1947, when he obtained from Congress authorization to spend \$400 million to aid Greece and Turkey. His move followed directly on withdrawal of aid to those countries by Great Britain, whose

resources were dwindling. Greece suffered from Communist guerrilla infiltration; Turkey lived under threat of Russia's constant pressures. Besides the appropriation, Congress authorized shipment of military equipment and dispatch of a military and technical mission. By 1950, the Red guerrillas had given up the struggle and in Turkey results were much more immediately successful. The Truman Doctrine is regarded as the first significant experiment in the policy of "containment," although it preceded by four months the intellectual presentation of this policy by George Kennan.

Eisenhower Doctrine

In January, 1957, President Eisenhower, noting the unsettled state of the Middle East, asked authority from Congress to co-operate with any nation in that area for economic development, to undertake programs of military assistance for such nations which desired it and to use U. S. armed forces to protect Mid-East countries "requesting such aid" against "overt armed aggression from any nation controlled by international communism." In March, Congress authorized expenditures up to \$200 million for 1957. Anti-Communist declarations were immediately forthcoming from Lebanon and Libya and more important, King Hussein of Jordan, took a strong stand against the leftist drift in his country. Arms also were shipped to the area to counter the build-up of Soviet military equipment in Syria.

U. S. POST-WAR TREATIES

North Atlantic Treaty Organization (NATO)

(Formed: April 4, 1949)

Members: United States, Canada, Iceland, Norway, Great Britain, Netherlands, Denmark, Belgium, Luxemburg, Portugal, France, Italy, Greece, Turkey, West Germany

In 1948, the United States government began talks with the signers of the Brussels Pact and Canada concerning the formation of a regional defense treaty in the North Atlantic area. It represented the first important security pact with European nations since the French Alliance of 1778 and marked the first time in United States history that the United States pledged itself to go to war in support of allies before the

actual outbreak of hostilities. The U. S. Senate ratified the treaty July 21, 1949.

The United States, acting under Article 3 of the Treaty, began a program of military assistance which at the end of the fiscal year 1957 will have amounted to nearly \$10 billion. Roughly half of all United States military assistance has gone to members of NATO. However, almost 85% of NATO's military preparation has come from the European countries themselves, increasing from about \$6 billion in 1949 to \$12 billion in 1955. The United States has nevertheless assumed almost one-third of the cost of equipment and the facilities of mutual military bases.

NATO now united most of the countries of the Atlantic community plus Greece, Turkey and West Germany, which were added to the original membership. Its organization comprises the top foreign, economic, defense and financial ministers of the member countries. The military responsibilities of NATO are divided into two major commands—SHAPE for Europe and SACLANT for the Atlantic Ocean area. SHAPE at present has 47½ divisions. SACLANT relies on naval strength to control the sea lands of the North Atlantic.

Western European Integration

Members: France, Italy, West Germany, Belgium, Netherlands, Luxembourg

A step-by-step process, the first came in 1944 when Belgium, the Netherlands and Luxembourg formed the Benelux Customs Union. Next, sixteen Western European nations created in 1948 the Organization for European Economic Co-operation (OEEC), to reduce import limitations and advance convertibility of currencies through the European Payments Union. Then followed establishment of the European Coal and Steel Community (1952), by which France, Italy and West Germany erected a supranational organization, which has set up a common market in coal and steel. These successes led to creation by the same six nations, in March, 1957, of Euromarket, to stimulate trade by eliminating customs barriers, creating common tariffs, cutting exchange restrictions, etc., and of Eurotom, an atomic energy pool.

Southeast Asia Treaty Organization (SEATO)

(Signed: Sept. 1954)

Members: United States, Great Britain, France, Australia, New Zealand, Pakistan, Thailand, Philippines

Weaker than NATO, SEATO does not include rigid provisions for collective defense but states that armed attack on any member would be regarded as a threat to safety of the others. SEATO represents the United States' desire to counterbalance the power of Communist China. Yet three major non-Communist members—Indonesia, Burma and India—are not members.

Baghdad Pact or Middle East Treaty Organization (METO)

(Signed: Nov. 1955)

Members: Turkey, Iraq, Iran, Great Britain, Pakistan

Although it inspired the pact, the United States is not a member. The pact's purpose is to provide a defense shield on the northern tier of the Middle East against Soviet penetration.

Organization of American States (OAS) and the Rio Treaty

In Sept. 1947, 18 Latin American countries (Nicaragua and Ecuador were excluded) and the U. S. signed at Rio de Janeiro the Rio Treaty under which all signatories agreed to protect against aggression every state in the Western Hemisphere. In Apr. 1948, all the American nations (21—Canada not included) joined in the Organization of American States (OAS) to implement the Rio Treaty and form a collective security system.

Reds' NATO—Warsaw Pact

Signed: May 14, 1955

Members: Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, U.S.S.R.

The Warsaw Pact was prompted by the admission of Western Germany to NATO and may be considered as the Communist equivalent in Eastern Europe to NATO in Western Europe. Article 4 of the agreement contains the same provisions as Article 5 of NATO, stating that an attack on one shall be regarded as an attack on all. Article 5 provides for a unified military command.

(For summaries of other Conferences and Treaties, see pages 172-76.)

MAP SECTION

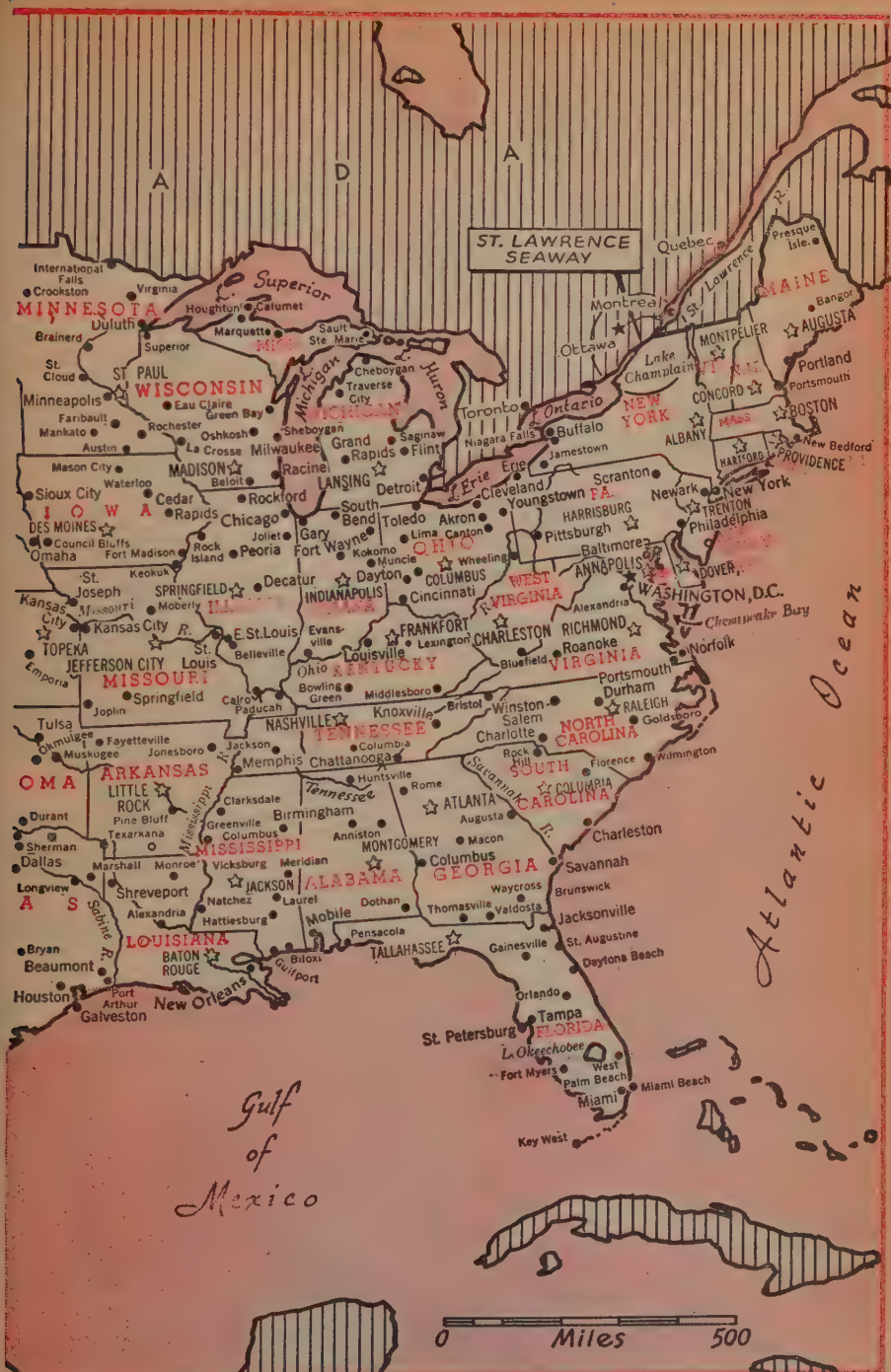
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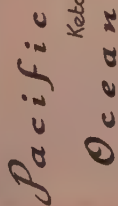
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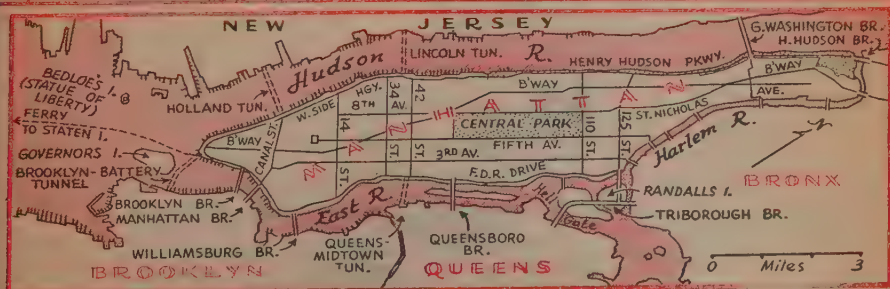
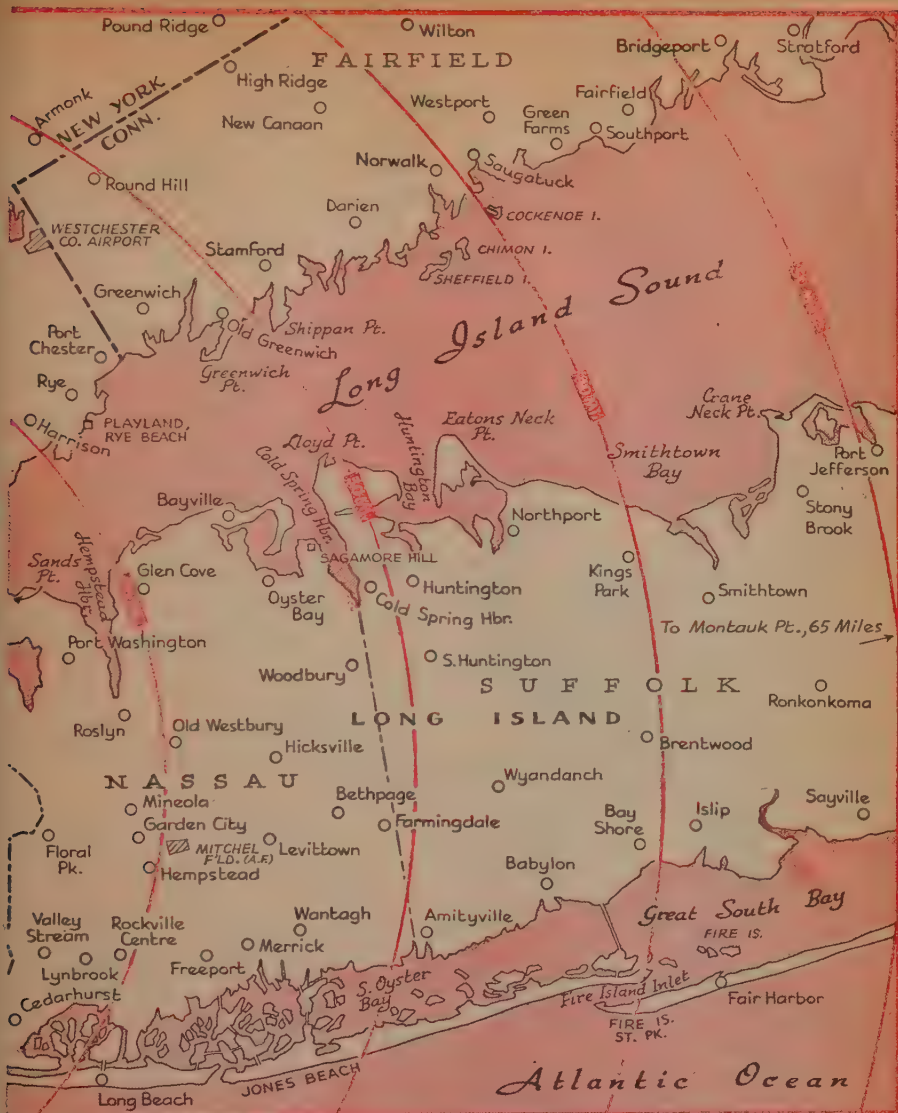


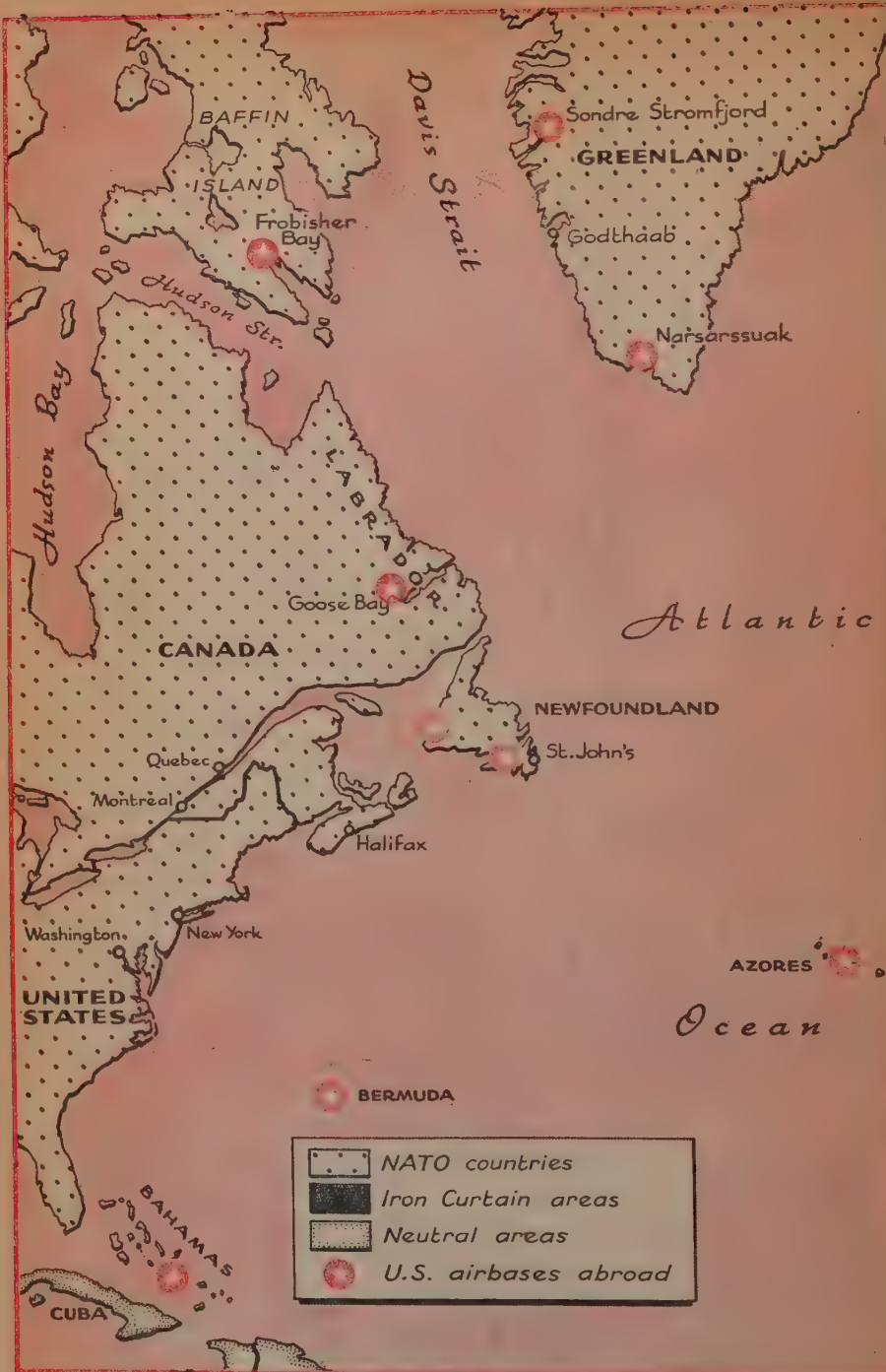
GEOGRAPHICAL VIEW
OF THE UNITED STATES

POLAR ICE



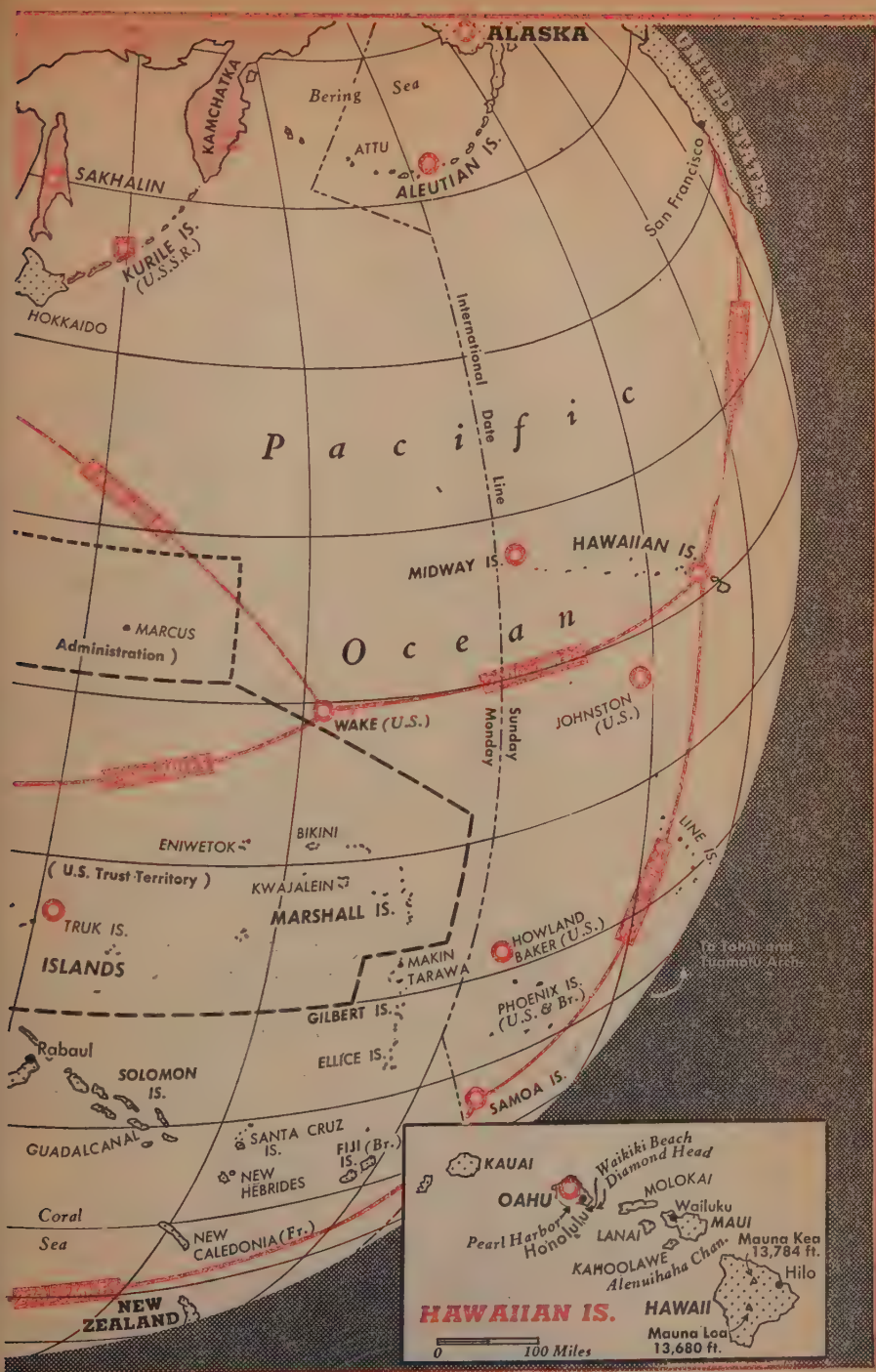
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THE EAST AND PACIFIC













**SOUTH
AMERICA**



CLIMATE



POPULATION



OCCUPATIONS





CENTRAL AMERICA AND THE WEST INDIES

● Capitals

0 1000
Miles

Atlantic Ocean



Atlantic

Ocean



A horizontal scale bar with the word "Miles" centered below it. The bar has a "0" at the left end and a "100" at the right end. There are three tick marks between 0 and 100, dividing the bar into four equal segments.

FRANCE



CIVIL RIGHTS

See Special Article on Supreme Court, page 84

Not since 1875, in the post-Civil War Reconstruction era, had the Senate passed a civil-rights bill designed to help Negroes get equal treatment. Many times such bills had died in the Senate as a result of Southern filibusters.

President Truman repeatedly asked for legislation to set up a Fair Employment Practices Commission—to give Negroes more job opportunities—plus companion legislation to make lynching a Federal crime (as opposed to state) and to outlaw the poll tax in the South.

President Eisenhower took a different approach in his first State-of-the-Union message, emphasizing the need of Federal action to assure Negroes of their right to vote—a right which they were commonly denied in some southern localities.

In 1957, the Eisenhower Administration proposed to Congress a civil-rights bill. Its main provisions were:

Part I—Set up a Federal civil-rights commission to investigate cases of racial discrimination.

Part II—Establish a special civil-rights division within the Department of Justice.

Part III—Permit Federal courts to issue injunctions to implement a broad range of civil rights, including the right to attend an integrated school in the South.

Part IV—Permit the Federal government to obtain injunctions against interferences with voting rights. Violators could be punished by Federal judges.

The House passed the bill substantially as proposed by the Administration.

The Senate cut out almost all of Part III, thereby limiting the bill to guarding the voting rights of Negroes, not their civil rights in general. The Senate also amended Part IV to provide for jury trials in cases of criminal contempt of court instead of decisions by judges alone.

The changes were opposed by the Administration, but were successfully supported by Southern Senators with the aid of moderates in both parties. In return for adoption of the changes, the Southerners refrained from filibustering the bill to death. In fact, 5 Southern Senators broke with tradition and voted for the bill, which in its amended form was passed by the Senate.

In its final form, as a result of a Senate-House compromise, the bill limited the jury-trial provision to cases involving penalties of more than \$3,000 fine or more than 45 days in jail.

1956

Apr. 9 Atty. Gen. Brownell sends civil-rights recommendations to Congress. (Bill passed by House but died in Senate.)

1957

June 18 House passes slightly revised civil-rights bill, 286-126. (Democrats voted 118, Yes; 107, No. Republicans voted 168, Yes; 19, No.)

July 24 Senate votes, 52-38, to cut bill down to a right-to-vote measure by deleting Part III (Democrats voted 34, Yes; 13, No. Republicans voted 18, Yes; 25, No.)

Aug. 7 Senate passes civil-rights bill, 72 to 18. (Democrats voted 29, Yes; 18, No. Republicans voted 43, Yes; 0, No.)

27 House passes civil-rights bill in final version, 279 to 97. (Democrats voted 128, Yes; 82, No. Republicans voted 151, Yes; 15, No.)

Sept. 29 Senate passes final version, 60-15. (Democrats voted 23, Yes; 15, No. Republicans voted 37, Yes; 0, No.)

SEGREGATION

Conflict Over School Racial Integration

The Supreme Court ruled unanimously on May 17, 1954, that racial segregation in the public schools is unconstitutional under the 14th Amendment. On May 31, 1955, the Court ruled that the process of desegregation (or racial integration) should be supervised by regional Federal courts with a view to achieving the goal "with all deliberate speed."

As of the opening of schools in September, 1957, the picture was as follows:

The District of Columbia carried integration the farthest. Six border states made progress—Delaware, Kentucky, Maryland, Missouri, Oklahoma and West Virginia. Three-fourths of their 800 school districts were at least started along the path of integration, with 60,000 Negro

children attending mixed schools. All tax-supported colleges were open to Negroes.

Four states made small attempts at integration—Arkansas, North Carolina, Tennessee and Texas.

Seven states had made almost negligible attempts at integration—Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina and Virginia.

The school integration issue flared up alarmingly in Little Rock, Ark. A gradual integration plan had been formulated by the school superintendent and explained to the parents. The plan was approved by a Federal court.

Gov. Orval Faubus ordered out National Guardsmen on Sept. 4 to preserve order—according to his version—and to block entry of 9 Negro pupils in the formerly all-white Central High School of Little Rock, with approximately 2,000 students.

After a conference with President Eisenhower at his vacation place, Newport, R. I., Faubus continued to block integration. Federal Judge Ronald N. Davies, temporarily assigned to Little Rock from North Dakota to fill a judicial vacancy, rejected a school board request for delay of integration and ruled that it should proceed forthwith.

Next, Judge Davies enjoined Gov. Faubus and two National Guard officers from obstructing integration. Faubus then called off the National Guard patrol of the high school.

The following Monday, Sept. 23, a mob estimated at 800 persons, including white supremacists from outside Little Rock, formed at the Central High School. The 9 Negro pupils were spirited into the school through a side door. The mob, despite a police cordon, beat up 3 Negro news correspondents and a Negro news photographer. As the mob grew increasingly unruly, the Mayor of Little Rock ordered the Negro pupils to go home at the lunch hour. Physical violence did not touch them because of their quiet withdrawal.

President Eisenhower issued a "cease and desist" order designed to stop mob obstruction of integration. When the mob formed again the following day, he ordered the 10,000-man Arkansas National Guard into Federal service and directed the use of Federal troops if necessary to enforce the court's integration order.

More than 1,000 troops of the 101st Airborne Division moved into Little Rock on Sept. 24 by plane and truck and took up positions in the vicinity of Central High School. Next day the 9 Negro pupils—6 girls and 3 boys—returned to the school in safety. The paratroopers prevented the

formation of a mob with fixed bayonets. One man was bayoneted in the arm, and another man, who tried to grab a paratrooper's weapon, was clubbed on the head with a rifle butt.

Thereafter, the school was quiet and the Negroes attended classes without molestation by the white pupils. Gov. Faubus, on a national radio-television network, bitterly criticized the presence of Federal troops and called Arkansas "an occupied territory."

Four Southern Governors went to see President Eisenhower on Oct. 1. They thought they had an understanding with Gov. Faubus to support integration so that Federal troops could be withdrawn. The statement issued by Faubus was ambiguous, however, and Eisenhower declined to recall the troops.

The President said there was a deeper issue involved than racial integration. He said the troops were in Little Rock "to uphold the courts of the land under a law that was passed in 1792 because it was early discovered that unless we support the courts in whose hands are all our freedoms and our liberties, our protection against autocratic government, then the kind of government set up by our forefathers simply would not work."

1957

- Sept. 4 Gov. Orval Faubus of Arkansas blocks court-ordered school integration with National Guard troops.
- 5 Eisenhower telegraphs Faubus to halt his resistance to integration.
- 14 Gov. Faubus flies to Newport, R. I., to talk to Eisenhower; promises to obey court orders.
- 20 Federal court enjoins Gov. Faubus; he withdraws National Guard from Little Rock high school.
- 23 Mob in Little Rock, Ark., beats Negro reporters as 9 Negro pupils are spirited into high school.
- 24 Eisenhower sends Army troops to Little Rock to quell mob and protect school integration.
- 25 Little Rock school integrated as troops keep peace.
- 26 Gov. Faubus tells TV audience Little Rock is "occupied territory."

Information Please Almanac now proceeds to an analysis of the role of the Supreme Court in our history of constitutional government.

THE SUPREME COURT TODAY AND YESTERDAY

By

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SHORTLY before he was named to the Supreme Court by Franklin D. Roosevelt in 1941, the late Robert H. Jackson wrote a book about the New Deal's troubles with the judiciary which happens to contain a rather striking clue to the storm currently raging around the High Court. "The ultimate function of the Supreme Court," the future Justice told us, "is nothing less than the arbitration between fundamental and ever-present rival forces or trends in our organized society."

Jackson went on to point out that the Supreme Court conference chamber has served as a "forum" for every important issue which has divided the American people. Among the many burning questions which have come before the Justices, another student of the Court has listed "the dramatic conflicts over slavery, the contest between land and water transportation, the struggle of industrial competition against the forces of concentration, the clashing interests of workers, consumers and investors, and the claims of dissenting groups and individuals."

Once this simple fact of our history is understood, it should be apparent that, as Jackson also observed, "Conflicts which have divided the Justices always mirror a conflict which pervades society." What is perhaps far less easy to comprehend are the reasons why a judicial tribunal should have come to occupy a position which enables it to have the last word on matters of public policy. This phenomenon is all the more remarkable when one realizes

that we have borrowed most of our legal precepts from England, whose traditions and institutions are subject to the will of Parliament; more accurately, a majority of the House of Commons.

Yet even before the Constitutional Convention of 1787 met at Philadelphia to scrap the Articles of Confederation and to frame a new constitution, there were indications that a good many Americans of substance and influence were beginning to doubt the capacity of legislative assemblies to enact just or impartial laws. The early state constitutions, while professing faith in the separation of governmental powers, apportioned these powers in such a way as to make the legislature dominant.

It was probably inevitable that the law makers should have come to be blamed for the social unrest which marked the years following the American Revolution. As the antagonism between debt-ridden farmers (who controlled the legislatures in most of the states) and the men of finance and commerce grew more intense, the discontented but powerful minority turned to courts for protection against measures hostile to their interests. Thus did the search for greater economic and political stability lead to the emergence of the judiciary as a guardian of private rights, particularly property. It is no accident, therefore, that the power of courts to nullify legislation should have become, in time, an essential part of the grand scheme of constitutional checks and balances for curbing the excesses of popular majorities.

The Apology for Judicial Supremacy

One of the proudest achievements of Western civilization has been the substitution of law for force as a principle for regulating the relations between man and man and man and the state. We look to courts to settle private quarrels and to safeguard

society from those who would offend against its laws—the administration of civil and criminal justice.

But these traditional functions of courts do not explain the Supreme Court's extraordinary power in the American com-

munity. Its unique role stems from the fact that quite early in our existence under the Constitution, the Court assumed the right to control the other branches of the national government as well as the actions of the states and their local subdivisions. The social consequence of this development has never been described more clearly than in the words which Alexis de Tocqueville used more than a century ago in his classic work *Democracy in America*: "Scarcely any political question arises in the United States that is not resolved sooner or later into a judicial question."

Judicial power, American style, is nowhere specifically provided for in the Constitution itself. It has been inferred by lawyers and judges from the character and phraseology of the document. If it is at all true—as Ralph Waldo Emerson once said—that "every institution is the lengthened shadow of one man," one need not hesitate in attributing to John Marshall the chief personal responsibility for making the Supreme Court into the mighty instrument of government it has come to be. For it was John Marshall, Chief Justice for 34 years, who succeeded in establishing the Court's special role as final interpreter of the Constitution. The process by means of which it has been performing this function has come to be known as judicial review.

Contrary to what many believe, Marshall was not our first Chief Justice. John Jay was the Court's first presiding officer, but resigned in 1795 to become Governor of New York. Two other men held the position for brief periods before John Adams appointed Marshall in February, 1801, one month before turning over the Presidency to Thomas Jefferson.

A mere two years later, Marshall took advantage of a dispute over Jefferson's refusal to honor certain of Adams' appointments to proclaim that: "It is, emphatically, the province and duty of the judicial department, to say what the law is." In the course of vindicating this high prerogative of the Supreme Court, Marshall developed a conception of the Constitution which has enabled oncoming generations of Americans to adapt their fundamental charter to the vast changes wrought by time and technology. His immense service in infusing enduring vitality into the Constitution has been celebrated many times, but never more incisively or more succinctly than by Justice Felix Frankfurter when he opened the 1955 conference on "Government Under Law" marking the 200th Anniversary of the birth of the great Chief Justice:

"When Marshall came to the Supreme

Court, the Constitution was still essentially a virgin document. By a few opinions—a mere handful—he gave institutional direction to the inert ideas of a paper scheme of government. . . . There can be little doubt that Marshall saw and seized his opportunities to educate the country to a spacious view of the Constitution, to accustom the public mind to broad national powers, to counteract the commercial and political self-centeredness of States. He was on guard against every tendency to continue treating the new Union as though it were the old Confederation. He imparted such a momentum to his views that the Court and eventually the country were moved in his general direction, beyond his own time and into our own."

Marshall's opinion in the famous 1803 case of *Marbury v. Madison* asserted the right of the Supreme Court to hold acts of Congress unconstitutional, and in 1810 he enlarged the Court's power to include the veto of state legislation. To Marshall the crucial problem was how to enforce the "supremacy" of a written constitution, regarded by him to be the "greatest improvement on political institutions." The Constitution embodies the "original and supreme will" of the people. That will has been expressed in the form of certain principles designed to be both "fundamental" and "permanent" and therefore binding on the officials whom they restrict.

"Certainly, all those who have framed written constitutions," Marshall insisted, "contemplate them as forming the fundamental and paramount law of the nation, and consequently, the theory of every such government must be, that an act of the legislature, repugnant to the constitution, is void." It would be "immoral" and "worse than solemn mockery" if judges, who take an oath to defend the Constitution, were to refuse to make it known that they considered the legislation under attack to violate the Constitution, "the supreme law of the land."

The United States Constitution embodies three fundamental limitations upon the exercise of governmental power. These are the division of authority between the national government and the states creating the Federal Union, the separation of powers among the three departments of the national government, and the guarantees of individual rights. It is to be noted that the Federal judiciary is established as an equal and coordinate branch. The independence of the judges is made secure by giving them life tenure—service "during good behavior," the Constitution says—and by the provision forbidding Congress to reduce their salaries.

Umpiring the Federal System

In Marshall's time, the states and the nation were still looked upon as mutually hostile governments whose antagonisms might dissolve the Union. The Supreme Court was to serve as the ever active but impartial umpire between them. Marshall's basic strategy for maintaining the "more perfect Union" was to interpret liberally the powers of the national government. Speaking of possible conflicts between the two governments, Marshall warned that they "must be decided peacefully, or remain a source of hostile legislation, perhaps of hostility of a still more serious nature; and if it is to be so decided, by this tribunal alone can the decision be made. On the Supreme Court of the United States has the constitution of our country devolved this important duty."

When one thinks of the Civil War and the tragic collapse of the will to accept peaceful adjustment of inter-governmental conflicts, Marshall's admonition takes on the character of dramatic foreshadowing. The warning was sounded in

his historic opinion in *McCulloch v. Maryland*, decided in 1819—an opinion which deprived the States of any right to interfere, by taxation or otherwise, with the activities of agencies created by the Federal government. It was in this case that the Court also upheld the authority of Congress to charter banks, though there was no word on the subject in the Constitution. The Court justified this sweeping expansion of national power by relying on the doctrine of incidental or implied powers—the doctrine that Congress is free to enact measures deemed "necessary and proper" for putting into practical effect the powers expressly delegated to it in the Constitution. Marshall's now familiar assertion—"we must never forget, that it is a *Constitution* we are expounding"—continues to be quoted by jurists who believe, as he did, that the Constitution of the United States was "intended to endure for ages to come, and, consequently to be adapted to the various crises of human affairs."

Self-Imposed Limits

Even before Marshall had formulated his formidable apology for judicial review, the Supreme Court had begun to evolve principles of self-restraint which have proved to be exceedingly useful in keeping intact the great power he claimed for it. Unlike the highest tribunals in some of the states, the Supreme Court of the United States will not hand down so-called advisory opinions—opinions which merely speculate on the constitutionality of pending measures and have no binding effect. When a President wishes to have legal advice of an official nature, he requests his Attorney General to prepare an opinion on the subject in question.

The Court restricts itself to litigation. It will decide only actual "cases" or "controversies" and not disputes over hypothetical matters. "The Court's only power is to decide lawsuits between adversary litigants with real interests at stake."

The Supreme Court refrains from pass-

ing on "political questions," questions it regards to be incapable of judicial determination and which are better handled by Congress or the President. It was on this theory that the Court refused to determine the constitutionality of the failure of Illinois to reshuffle congressional districts in accordance with the latest census. While the reasons for treating certain problems as political are not always made explicit, it may be assumed that the motivation is not to hurt the Court's standing by issuing decrees which are likely to be defied. Lacking the power of the purse and the sword, the Justices are not unaware of the extent to which the Court's power and prestige depend upon the support by the other branches of the government and upon public opinion generally. After all, they know of Andrew Jackson's celebrated taunt: "John Marshall has made his decision, now let him enforce it."

Jurisdiction, Size and Compensation

Article III of the Constitution vests the judicial power of the United States in "one supreme Court" and in such "inferior Courts" as Congress may establish. Only the Supreme Court, therefore, may be said to owe its existence to explicit provision of the Constitution. However, both its size

and appellate jurisdiction are subject to regulation by Congress. In order not to risk having the Court hold the Reconstruction Acts invalid, Congress deliberately cut down the Court's jurisdiction in 1869 in such a way as to keep it from deciding a case which had already been argued.

The right of Congress to do this was upheld by the Court.

Whatever might have been said against it on moral grounds, President Roosevelt's 1937 plan to "pack" the Supreme Court by enlarging its membership could not have been attacked as unconstitutional. Its size has been changed by Congress several times, but since 1869 the Supreme Court has consisted of nine members—a Chief Justice and eight Associate Justices. Justices are appointed by the President and must be confirmed by a majority vote of the Senate.

Except for the fact that he is the

Court's administrative officer—presiding at all of its public sessions and at the conferences of the Justices—the position of the Chief Justice of the United States (to call him by his official title) is no different from that of his colleagues. "His actual influence will depend upon the strength of his character and the demonstration of his ability in the intimate relations of the judges"—is the way Charles Evans Hughes once described the ultimate source of a Chief Justice's authority. For his extra burdens, the Chief receives \$500 more than the Associate Justices. Their present salary is \$35,000 a year.

Access to Federal Courts

Basically, whether or not a case falls within the Supreme Court's province depends on the subject matter of the controversy or who the litigants are. *"The judicial power shall extend to all cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and treaties made, or which shall be made, under their Authority."* After making this general grant of power to the judicial branch of the national government, Article III of the Constitution proceeds to confer jurisdiction on Federal courts in two classes of cases. In the first category, whether or not a case falls within their jurisdiction depends on the subject matter of the litigation, regardless of who the litigants or parties happen to be. For example, if the outcome in a case hinges on the interpretation of a provision of the Constitution, "Laws of the United States" or a treaty, it raises a "federal" question and therefore may potentially reach the Federal courts. In the second class of cases, the jurisdiction of

Federal courts may be invoked because of the nature of the parties. Cases between two or more states, suits in which the United States itself is a party and cases between citizens of different states—all illustrate the latter reason for access to the Federal courts.

So far as the Supreme Court itself is concerned, it is granted both original and appellate jurisdiction. Its "original jurisdiction" is limited to cases "affecting" ambassadors, other public ministers and consuls and those in which a State is a party. Such cases can go directly to the Supreme Court without first having to be heard by any other tribunal, federal or state. But of course in the exercise of its appellate jurisdiction, the Supreme Court can review decisions of a state's highest court or of lower Federal courts which involve a "federal" question or concern litigants whom the Constitution assures the right to have their claim determined by a Federal court.

Politics and Appointments

No less illustrious a jurist than Oliver Wendell Holmes—who was put on the Court by Theodore Roosevelt after serving for twenty years on the Supreme Judicial Court of Massachusetts—was apparently convinced that the experience in practical affairs gained from a life in politics was a good preparation for service on the Supreme Court. "I was driven years ago to the conclusion," he wrote to Harold J. Laski in 1925, "that political considerations had not hurt the character of appointments here."

Some of the most eminent of the Court's members have ascended the Bench without having served on any Federal or state court before—among them John Marshall, Joseph Story, Roger B. Taney, Samuel F. Miller, Charles Evans Hughes,

Louis D. Brandeis. Justice Frankfurter's almost life-long study of the background of Supreme Court personnel has led him to conclude that, "the correlation between prior judicial experience and fitness for the functions of the Supreme Court is zero." Perhaps the least reliable guide to the future conduct of a Justice is his political affiliation. Woodrow Wilson gave the country both Louis D. Brandeis—who, as a judge, continued to speak as an apostle of enlightened liberalism—and James C. McReynolds, who became a symbol of judicial reaction. And we know how bitterly disappointed Theodore Roosevelt was when he discovered that Justice Holmes did not at all share his own trust-busting zeal.

The Court's Working Habits

The process by which the Supreme Court does its work may be described as essentially an intellectual and deliberative one. At the behest of the Court itself, Congress, in 1925, diminished its jurisdiction in order to enable it to give closer attention to questions of public importance. This was accomplished by allowing it greater discretion in the selection of cases to be heard.

The usual line of appeal to the Supreme Court is either from one of the eleven United States Courts of Appeals or the highest court of a state. One wishing to carry his case to the nation's top tribunal files a writ of appeal or a petition for certiorari. In but a small number of the cases which come before the Supreme Court, are litigants entitled to be heard as a matter of right—by means of a writ of appeal. With respect to most of the business which it handles, the Court itself decides what cases it will hear. Most petitions for certiorari are denied, but a request will be granted even if only four Justices deem a case worthy of consideration.

In the ordinary case each side has one hour for oral argument. Occasionally the time limit is extended. Thus, the Justice Department and the defense were each given two hours when the Court met on July 8, 1957, to hear the case growing out of the Government's decision to turn William Girard over for trial in a Japanese court.

Even the most distinguished attorney has no assurance that he will be permitted to present his case as he had planned it. He must be prepared for interruptions in the form of questions from the Justices. The Supreme Court rules tell him that the Court frowns upon "any oral argument that is read from a prepared text." Counsel appearing before the Court are expected to "emphasize and clarify" the contentions made in their written briefs. Any lawyer who has been a member of the bar

of the highest court of his state for at least three years can be admitted to practice before the United States Supreme Court when "indorsed" by two attorneys already practicing before it.

When the Court is not in recess, it meets at 12 o'clock, sharp, rises for a half-hour lunch at 2 o'clock and resumes at 2:30 for two more hours. At the end of Earl Warren's second year as Chief Justice, it was announced that the conferences of the Justices—which customarily were held on Saturday—would henceforth be held on Friday. At these conferences, the cases which were argued during the week are discussed and a vote taken. The Chief Justice presents the case, and then his colleagues, usually in order of seniority, give their views. However, when the time for decision arrives, the junior member votes first and the Chief Justice last. The Chief Justice assigns the writing of opinions, and he may always take for himself the privilege of speaking for the Court. When the Chief is in the minority, the senior Associate Justice on the majority side assigns the writing of the opinion. Any member of the Court is free to express his disagreement by submitting a dissenting opinion.

In the lectures on the Supreme Court which he was preparing at the time of his death in 1954, Justice Jackson has shared with us an intimate glimpse of the Court's working habits. His candid picture deserves to be recalled: "The time devoted at conference to argued cases is inadequate for detailed deliberation and results, more or less, in a canvass of impressions with the understanding that a vote on any case is tentative and on later consideration may be changed. And not infrequently the detailed study required to write an opinion or dissent, will lead to a change of a vote or even to a change of result. If there is further conferring, it is unofficial, usually between two or more Justices of like mind in the particular case."

The Storm Center of American Politics

Speaking about the Supreme Court in 1913, Justice Holmes had occasion to observe, "We are very quiet there, but it is the quiet of a storm center, as we all know." The ominous note was really in the nature of a prophecy of the inevitable. Since then the Court has confined itself almost exclusively to issues of public concern, so that controversies over its decisions are bound to occur even more often.

We are living through such a period of popular clamor over the trend of judicial behavior, and the chief source of agitation is without doubt the 1954 decision on segregation in the public schools. A former member of the Court—Governor James F. Byrnes of South Carolina—has called for measures to "curb" the Court, and the Declaration of Constitutional Principles signed by ninety-six Southern members of Congress on March 11, 1956

accused it of the "abuse of judicial power." What has the Court done?

Equal Protection and Racial Discrimination

Aware that as the Constitution then stood there was nothing to prevent the Southern States from discriminating against the former slaves, Congress proposed constitutional amendments as soon as the Civil War was over which were designed to keep the South from nullifying the victory won on the battlefield. In 1865 the Thirteenth Amendment abolished slavery, and three years later the Fourteenth Amendment was added. One of the most important provisions in the Fourteenth Amendment forbids a State "to deny to any person within its jurisdiction the equal protection of the laws." However, once normal conditions returned in the decades that followed, Southern lawmakers began to display considerable ingenuity in devising ways and means for maintaining "white supremacy."

Aside from the efforts to sterilize the Negro's political influence—contrary to the Fifteenth Amendment's guarantee of the right to vote—their chief aim was to prevent mingling of the races in the ordinary activities of life in the community, especially travel, recreation and amusements. Through the Civil Rights Act of 1875, Congress undertook to stop discrimination on the basis of race or color in such public accommodations, but the legislation was struck down by the Supreme Court in 1883 on the ground that the Fourteenth Amendment did not authorize Congress to regulate discrimination practiced by private individuals. The prohibitions in the Amendment were said to apply to discrimination resulting from state law.

"Separate but Equal"

Yet when the States began to adopt regulations instituting the very type of discrimination which Congress had sought to outlaw, the Supreme Court allowed them to stand. *Plessy v. Ferguson*, decided in 1896, is the case in which the Court sustained the right of a Southern State to segregate the races, provided "separate but equal" facilities were made available. Involved in this case was a Louisiana law requiring separate accommodations on railroads. The legislation was challenged as a denial of equal protection of the laws.

Over the vigorous objections of Justice John Marshall Harlan, the lone dissenter

in the case, the Supreme Court held that the Louisiana statute was a reasonable exercise of the State's authority to maintain law and order in the community. According to the majority, the Fourteenth Amendment merely required the equality of the races "before the law" but was not intended "to abolish distinctions based upon color, or to enforce social, as distinguished from political equality." In view of the criticism that the 1954 case which overturned *Plessy v. Ferguson* was based upon psychological theory, it may be well to recall a revealing observation in the 1896 opinion by Justice Brown. Referring to the objection against the forced separation of the races, Brown remarked: "We consider the underlying fallacy of the plaintiff's (Plessy's) argument to consist in the assumption that the enforced separation of the two races stamps the colored race with a badge of inferiority. If this be so, it is not by reason of anything found in the act, but solely because the colored race chooses to put that construction upon it."

In the opinion of Justice Harlan, the separation of Negroes on the basis of their race imposed on them "a badge of servitude" and was entirely inconsistent with the purposes of the Civil War Amendments. He insisted that "our Constitution is color-blind" and was blunt enough to say: "The thin disguise of 'equal' accommodations for passengers in railroad coaches will not mislead anyone, nor atone for the wrong this day done."

The "wrong" of which Justice Harlan spoke was, of course, the whole system of segregation, and in bestowing its blessings upon it the Supreme Court no doubt contributed to the survival of "Jim Crow" in Southern society. It is ironic, indeed, that by way of defending the separation of passengers, Justice Brown cited the existence of segregated schools in the District of Columbia and even in communities outside the South. When such segregation came to be challenged before the Supreme Court in later years, the Court relied on *Plessy v. Ferguson* as precedent for upholding the legality of segregated education.

Segregation in Higher Education

The first major successes in the resistance to segregated schools were in the field of higher education, most notably in 1950, when the Court showed that it was willing to consider "intangible" factors in measuring equality. Chief Justice Fred M. Vinson, a Kentuckian, led the Court in holding that Texas could not require Negro students to attend a newly-estab-

lished segregated law school, Vinson saying that to compare this law school with the one at the University of Texas it was necessary to consider "those qualities which are incapable of objective measurement but which make for greatness in a law school." In another case decided at the same time, the Court held that a Negro working toward his doctorate in the School of Education at the University of Oklahoma, was not to be set apart or discriminated against in other ways in such places as class-rooms, library and cafeteria. To ascertain whether the Negro student was receiving equal treatment, Vinson declared, one must reckon with such factors as "his ability to study, to engage in discussion and exchange views with other students, and, in general, to learn his profession."

The 1954 Segregation Decision

These decisions served to intensify the drive against segregation in primary and secondary schools. But the big question they left unanswered was whether the Supreme Court was ready to overrule *Plessy v. Ferguson*. The answer came on May 17, 1954 in the opinion by Chief Justice Warren holding that "in the field of public education the doctrine of 'separate but equal' has no place." Referring to the subtle psychological factors discussed by Vinson in the cases concerned with graduate and professional education, the Chief Justice said: "Such considerations apply with added force to children in grade and high schools. To separate them from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone."

When the case was argued for a second time some months earlier, most of the discussion was devoted to the question as

to whether the Fourteenth Amendment was intended to prevent the establishment of segregated schools. The Chief Justice now revealed that this exposition as well as their own study of the problem had only served to convince the Justices that the evidence on the subject was at best "inconclusive." Neither was the Court willing to "turn the clock back" to 1896. To determine whether segregation of the races at school denies to Negroes the equal protection of the laws, it was essential to bear in mind the fact that in our highly complex and technological society public education has become, for nearly all Americans, absolutely indispensable to the enjoyment of full equality of opportunity. The practical question was, therefore: What kind of education were Negro children receiving?

Chief Justice Warren made it plain that regardless of the state of "psychological knowledge" in 1896, the Supreme Court was now prepared to accept the findings of modern social scientists. He quoted with approval statements in the lower courts which maintained that the separation of white and Negro children in the public schools tends to retard the full development of the Negro children and to deprive them of the advantages they would have in racially integrated schools. A year later the Court issued an enforcement decree directing the Federal district courts to take such steps as might be necessary to achieve the integration of the Nation's public schools "with all deliberate speed."

No one can doubt that the Justices were aware of the explosive character of the problem and of the far-reaching consequences of their decision. Surely the opportunity afforded for extensive argument and re-argument is proof enough of the great care and of the keen sense of responsibility with which they approached their delicate task. Perhaps the Justices were inspired by some such call to courage as is implicit in a familiar challenge of Justice Brandeis: "Sometimes, if we would guide by the light of reason, we must let our minds be bold."

Old Conflict—New Issues

In the years which culminated in the New Deal's challenge to the Supreme Court, the main legal problem confronting our political leaders was to find constitutional support for positive action by government in furtherance of economic recovery and social welfare. Caught between old theories of limited governmental

power and demands for unprecedented national action for a people in distress, dominant Supreme Court majorities remained hostile to the new forces. It is now exactly twenty years since the Court itself staged the about-face which saw the validation of such important measures as the Wagner Act and the Social Se-

curity Act. As the result of this "revolution" in constitutional doctrines, the resources for government regulation of the economy and its promotion of public welfare generally are practically limitless.

Today, the battle line has shifted from a struggle to vindicate the powers of government to concern over their abuse. It is because of some of its decisions in so-called civil rights cases that the Supreme Court is again the target of wide-spread criticism. The term that ended on June 25, 1957 offers some excellent examples of the Court's current troubles.

The Jencks Case and F.B.I. Files

Clinton E. Jencks, president of one of the locals in the International Union of Mine, Mill and Smelter Workers, was convicted for filing a false non-Communist affidavit with the National Labor Relations Board under the procedures of the Taft-Hartley Act. The two key witnesses against him were Harvey Matusow and John W. Ford, F.B.I. informants within the Communist Party paid to make oral and written reports to the Bureau. Jencks asked to see these documents in the hope of breaking down the credibility of his chief accusers by showing inconsistencies between their testimony at the trial and their previous reports. The trial judge denied this motion.

Justice William J. Brennan led a majority of his colleagues in holding that Jencks was entitled to examine these reports. The opportunity to do so in a criminal case might be essential to the preparation of an adequate defense. The heart of the Court's opinion is probably contained in this sentence: "We now hold that the petitioner (Jencks) was entitled to an order directing the Government to produce for inspection all reports of Matusow and Ford in its possession, written and when orally made as recorded by the F.B.I., touching the events and activities as to which they testified at the trial."

In a brief but sharp dissent, Justice Clark charged, in effect, that the Court was endangering national security. "Unless the Congress changes the rule announced by the Court today," he protested, "those intelligence agencies of our government engaged in law enforcement may as well close shop for the Court has opened their files to the criminal and thus afforded him a Roman holiday for rummaging through confidential information as well as vital national secrets. This may well be a reasonable rule in state prosecutions where none of the problems of foreign

relations, espionage, sabotage, subversive activities, counterfeiting, internal security, national defense, and the like, exist, but any person conversant with federal government activities and problems will quickly recognize that it opens up a veritable Pandora's box of troubles."

The alarm sounded by Justice Clark on June 3rd was immediately echoed by powerful voices in and out of the Halls of Congress. In the closing hours before it adjourned on August 30, Congress enacted a compromise bill which authorizes trial judges, and not the prosecution, to determine which items in confidential files may be made available to the defense.

The Watkins Case and Legislative Investigations

It would be difficult to determine which decision created greater consternation on Capitol Hill—the ruling in the *Jencks* case or the pronouncement in the *Watkins* case, two weeks later, that "there is no Congressional power to expose for the sake of exposure." John T. Watkins was for many years an official of the Farm Equipment Workers International Union, later merged into the United Electrical, Radio and Machine Workers. In the spring of 1954, he was summoned before the House Committee on Un-American Activities when it was looking into the infiltration of Communists into the labor movement. He informed the Committee that he would not plead the Fifth Amendment but that he felt that certain matters were outside its jurisdiction. "I do not believe," Watkins told the Committee, "that any law in this country requires me to testify about persons who may in the past have been Communist party members or otherwise engaged in Communist party activity but who to my best knowledge and belief have long since removed themselves from the Communist movement." For refusing to name former associates, he was prosecuted and convicted for contempt of Congress.

Chief Justice Warren was the Supreme Court's spokesman when it reversed Watkins' conviction. Justices Burton and Whitaker did not participate in the case, and only Justice Clark dissented. Noting that the investigations into threats of subversion in the decade following World War II "involved a broad-scale intrusion into the lives and affairs of private citizens," the Chief Justice strongly implied that our lawmakers seem to have forgotten that a legislative inquiry must not degenerate into an "inquisition" but must be related to the needs of lawmaking. The authoriza-

tion under which the House Committee on Un-American Activities operated was so broad and undefined that the Committee was able to roam too far afield, and witnesses did not always know just what the Committee was seeking to learn from them.

Since Watkins was not given "a fair opportunity" to determine whether he was within his rights in refusing to answer certain of the Committee's questions, he had been denied "due process of law" in violation of the Fifth Amendment. The Chief Justice emphasized that there was "no general authority to expose the private affairs of individuals when the inquiry is unrelated to legitimate legislative business." But from a constitutional standpoint, probably the most significant part of his opinion is the assertion that, "the First Amendment may be invoked against infringement of the protected freedoms by law or by lawmaking."

It is clear from the debate between the Chief Justice and Justice Clark that a major issue dividing them was the propriety of having the Court dictate to Congress how it should conduct itself. Chief Justice Warren sought to meet the inevitable criticism by declaring that the Court cannot "abdicate the responsibility placed by the Constitution upon the judiciary to insure that the Congress does not unjustifiably encroach upon an individual's right to privacy nor abridge his liberty of speech, press, religion or assembly." And what must have rankled most of all was his comment: "Investigations conducted solely for the personal aggrandizement of the investigators or to 'punish' those investigated are indefensible."

In his vehement dissent, Justice Clark accused the majority of a "mischievous curbing of the informing function of Congress" and of substituting "the judiciary as the grand inquisitor and supervisor of congressional investigations." He contended that the Court's objection to what it called the "tremendous latitude" allowed the House Committee on Un-American Activities was unrealistic. All congressional committees are given power in extremely broad terms. Justice Clark insisted that the restrictions imposed by the majority upon the Committee system of Congress would "cripple the system beyond workability."

An Important Free Speech Case

It must not be assumed that the Court is always divided in civil rights cases, though the questions they raise are often

difficult and close. When *Butler v. Michigan* was decided in February, Justice Frankfurter was able to speak for a unanimous Court on a highly controversial issue concerned with the freedoms of the First Amendment. At stake was the power of state and local governments to engage in the censorship of books.

Butler, a Detroit book dealer, was convicted for selling to a police officer a paperback copy of John Griffin's *The Devil Rides Outside*, in violation of a Michigan law which defines as obscene any book or other publication which might tend "to incite minors to violent or depraved or immoral acts," or might tend "to the corruption of the morals of youth."

Michigan's attempt to judge literature by the test of whether it was suitable for children was disposed of by Justice Frankfurter in a few terse sentences: "The State insists that, by thus quarantining the general reading public against books not too rugged for grown men and women in order to shield juvenile innocence, it is exercising its power to promote the general welfare. Surely, this is to burn the house to roast the pig. . . . We have before us legislation not reasonably restricted to the evil with which it is said to deal. The incidence of this enactment is to reduce the adult population of Michigan to reading only what is fit for children. It thereby arbitrarily curtails one of those liberties of the individual, now enshrined in the Due Process Clause of the Fourteenth Amendment, that history has attested as the indispensable conditions for the maintenance and progress of a free society."

Censors of Economic Policy

The Supreme Court's authority to interpret the meaning of the Constitution is not the only source of its power in our society. Its construction of legislation and administrative regulations can have far-reaching effects. A rather spectacular instance is *United States v. E. I. du Pont de Nemours and Company*, decided on June 3, 1957. It is one of those rare occasions when an important case was decided by less than a majority of the members of the Court. Justices Clark, Harlan and Whittaker took no part in the case and Justices Burton and Frankfurter dissented. The opinion for the Court delivered by Justice Brennan had the support only of Chief Justice Warren and Justices Black and Douglas.

Between 1917 and 1919, du Pont acquired a 23 per cent stock interest in the General Motors Corporation. This was

done in order to insure a continuing market for the company's finishes and fabrics. In 1949 the Justice Department brought a suit asking the courts to compel du Pont to dispose of some of its General Motors stock, complaining that through its relationship with General Motors, du Pont had secured an illegal preference over its competitors in the sale of its products to General Motors. All of this was going on, it was alleged, in violation of Section 7 of the Clayton Act, which forbids a corporation to acquire the stock of another where the effect is to substantially lessen competition between the two corporations or tends to create a monopoly in "any line of commerce."

After relating a detailed and fascinating story of the policies and maneuvers by means of which du Pont became General Motors' principal supplier of automotive finishes and fabrics, Justice Brennan concluded that it was quite obvious that du Pont's "commanding position" was achieved not through competition but because of its stock acquisition. As he said,

"The fact that sticks out in this voluminous record is that the bulk of du Pont's production has always supplied the largest part of the requirements of the one customer in the automobile industry connected with du Pont by a stock interest. The inference is overwhelming that du Pont's commanding position was promoted by its stock interest and not gained solely on competitive merit."

Justice Burton, who filed a lengthy and meticulous dissent, was not convinced; he came to a quite different conclusion from the mass of evidence in the case. To him it was clear that General Motors purchased du Pont paint and fabrics solely because of their superior quality and not because of any pressure due to du Pont's stock interest in the corporation. Objecting that "du Pont is being penalized rather than rewarded for contributing to technological advance," the Justice strongly implied that his colleagues had been led into error because of their aversion to bigness in business.

A Tradition of Judicial Independence

By the time Franklin D. Roosevelt was elected to a fourth term, he had placed on the Supreme Court eight Associate Justices and had elevated Harlan Fiske Stone, originally appointed by Calvin Coolidge, to be Chief Justice. A court controlled by men owing their office to the same President, it was assumed by some, would sooner or later become a rubber stamp for the Administration.

Within a few years, however, all could see that no such harmony or peace reigned within the Roosevelt Court. The close votes and sharp dissents which began to be registered made it obvious that the New Deal Justices differed with each other on many fundamental issues. In the 1943 term, for the first time in the Court's history, the cases in which the Justices were divided outnumbered those decided by unanimous vote.

The incidence or degree of disagreement among the members of the Supreme Court naturally fluctuates from year to year. But despite changes in personnel, the basic pattern which finds expression in the statement of conflicting views has not altered. That this is so is due both to the nature of our Constitution and to the character

of the problems which the Supreme Court seeks to resolve.

It is quite impossible to know what the great clauses of the document mean today by merely reading them. The general phraseology in which they are couched not only invites interpretation but opens the door to wide differences of opinion as to their purport. Moreover, the cases handled by the Supreme Court touch the deepest social, economic and political issues of our diverse society.

Nine independent men of varying backgrounds and attitudes, who are sworn to uphold the Constitution as they see it, should not be expected to speak with one voice on debatable questions. A recent comment by Justice Frankfurter is as good an answer to the critics of judicial discord as one can hope to find: "If the materials on which judicial judgments must be based could be fed into a machine so as to produce ineluctable answers, if such were the nature of the problems that come before the Supreme Court and such were the answers expected, we would have *I.B.M.* machines doing the work instead of judges."

Members of the Supreme Court of the United States

Source: The Marshal, Supreme Court of the United States.

Name	Birth		Religious Affiliation <i>(Source: Library of Congress)</i>	Appointment		Oath Taken		Service Terminated			Death		
	Place	Date		From	President	Date	Age	Date	Cause	Years Served	Age	Date	Age
CHIEF JUSTICES													
John Jay	N. Y.	1745	Episcopal	N. Y.	Washington	1790	44	1795	resigned	5	49	1829	83
John Rutledge	S. C.	1739	Church of England	S. C.	Washington	1795	55	1795	rejected	0	56	1800	60
Oliver Ellsworth	Conn.	1745	Congregational	Conn.	Washington	1796	50	1800	resigned	4	55	1807	62
John Marshall	Va.	1755	Episcopal	Va.	J. Adams	1801	45	1835	death	34	79	1835	79
Roger B. Taney	Md.	1777	Roman Catholic	Md.	Jackson	1836	59	1864	death	28	87	1864	87
Salmon P. Chase	N. H.	1808	Episcopal	Ohio	Lincoln	1864	56	1873	death	8	65	1873	65
Morrison R. Waite	Conn.	1816	Episcopal	Ohio	Grant	1874	57	1888	death	14	71	1888	71
Melville W. Fuller	Maine	1833	Protestant	Ill.	Cleveland	1888	55	1910	death	21	77	1910	77
Edward D. White	La.	1845	Roman Catholic	La.	Taft	1910	65	1921	death	10	75	1921	75
William H. Taft	Ohio	1857	Unitarian	Conn.	Harding	1921	63	1930	retired	8	72	1930	72
Charles E. Hughes	N. Y.	1862	Baptist	N. Y.	Hoover	1930	67	1941	retired	11	79	1948	86
Harlan F. Stone	N. H.	1872	Episcopal	N. Y.	F. Roosevelt	1941	68	1946	death	4	73	1946	73
Frederick M. Vinson	Ky.	1890	Methodist	Ky.	Truman	1946	56	1953	death	7	63	1953	63
Earl Warren	Calif.	1891	Protestant	Calif.	Eisenhower	1953	62	....	....	....	....	....	....
ASSOCIATE JUSTICES													
John Rutledge	S. C.	1739	Church of England	S. C.	Washington	1790	50	1791	resigned	1	51	1800	60
William Cushing	Mass.	1732	Unitarian	Mass.	Washington	1790	57	1810	death	20	78	1810	78
James Wilson	Scotland	1742	Episcopal	Pa.	Washington	1790	48	1798	death	8	55	1798	55
John Blair	Va.	1732	Presbyterian	Va.	Washington	1790	58	1796	resigned	5	64	1800	68
James Iredell	England	1751	Episcopal	N. C.	Washington	1790	38	1799	death	9	48	1799	48
Thomas Johnson	Md.	1732	Episcopal	Md.	Washington	1792	59	1793	resigned	0	60	1819	86
William Paterson	Ireland	1745	Presbyterian	N. J.	Washington	1793	47	1806	death	13	60	1806	60
Samuel Chase	Md.	1741	Episcopal	Md.	Washington	1796	54	1811	death	15	70	1811	70
Bushrod Washington	Va.	1762	Church of England	Va.	J. Adams	1799	36	1829	death	30	67	1829	67
Alfred Moore	N. C.	1755	Protestant	N. C.	J. Adams	1800	45	1804	resigned	3	48	1810	55
William Johnson	S. C.	1771	Presbyterian	S. C.	Jefferson	1804	32	1834	death	30	62	1834	62
Brockholst Livingston	N. Y.	1757	Presbyterian	N. Y.	Jefferson	1807	49	1823	death	16	65	1823	65
Thomas Todd	Va.	1765	Presbyterian	Ky.	Jefferson	1807	42	1826	death	18	61	1826	61
Gabriel Duval	Md.	1752	French Protestant	Md.	Madison	1811	58	1835	resigned	23	82	1844	91
Joseph Story	Mass.	1779	Calvinist	Mass.	Madison	1812	32	1845	death	33	65	1845	65
Smith Thompson	N. Y.	1768	Presbyterian	N. Y.	Monroe	1823	55	1843	death	20	75	1843	75
Robert Trimble	Va.	1777	Protestant	Ky.	J. Q. Adams	1826	49	1828	death	2	51	1828	51
John McLean	N. J.	1785	(¹)	Ohio	Jackson	1830	44	1861	death	31	76	1861	76
Henry Baldwin	Conn.	1780	Not known	Pa.	Jackson	1830	50	1844	death	14	64	1844	64
James M. Wayne	Ga.	1790	Protestant	Ga.	Jackson	1835	45	1867	death	32	77	1867	77

Philip P. Barbour.....	1783	Episcopal	Va.	Jackson	1836	52	1841	4	57	1841	57
John Catron.....	1786	Presbyterian	Tenn.	Van Buren	1837	51	1865	28	79	1865	79
John McKinley.....	1780	Protestant	Ala.	Van Buren	1838	57	1852	14	72	1852	72
Peter V. Daniel.....	1784	Protestant	Va.	Van Buren	1842	57	1860	18	76	1860	76
Samuel Nelson.....	1789	Protestant	N. Y.	Tyler	1845	55	1872	27	81	1873	81
Levi Woodbury.....	1789	Protestant	N. H.	Polk	1845	52	1851	5	61	1851	61
Robert C. Grier.....	1794	Presbyterian	Pa.	Polk	1846	52	1870	23	75	1870	75
Benjamin R. Curtis.....	1809	(?)	Mass.	Fillmore	1851	41	1857	5	47	1874	64
John A. Campbell.....	1811	Protestant	Ala.	Pierce	1853	41	1861	5	49	1889	77
Nathan Clifford.....	1803	Protestant	Maine	Buchanan	1858	54	1881	23	77	1881	77
Noah H. Swayne.....	1804	Quaker	Ohio	Lincoln	1862	57	1881	18	76	1884	79
Samuel F. Miller.....	1816	Protestant	Iowa	Lincoln	1862	46	1890	28	74	1890	74
David Davis.....	1815	Episcopal	Ill.	Lincoln	1862	47	1877	14	61	1886	71
Stephen J. Field.....	1816	Congregational	Calif.	Lincoln	1863	46	1897	34	81	1899	82
William Strong.....	1808	Presbyterian	Pa.	Grant	1870	61	1880	10	72	1895	87
Joseph P. Bradley.....	1813	Protestant	N. J.	Grant	1870	57	1892	21	78	1892	78
Ward Hunt.....	1810	Episcopal	N. Y.	Grant	1873	62	1882	9	71	1886	75
John M. Harlan.....	1833	Presbyterian	Ky.	Hayes	1877	44	1911	33	78	1911	78
William B. Woods.....	1824	Protestant	Ga.	Hayes	1881	56	1887	6	62	1887	62
Stanley Matthews.....	1824	Presbyterian	Ohio	Garfield	1881	56	1889	7	64	1889	64
Horace Gray.....	1828	(?)	Mass.	Arthur	1882	53	1902	20	74	1902	74
Samuel Blatchford.....	1820	Presbyterian	N. Y.	Arthur	1882	62	1893	11	73	1893	73
Lucius Q. Lamar.....	1825	Methodist	Miss.	Cleveland	1888	62	1893	5	67	1893	67
David J. Brewer.....	1837	Protestant	Kans.	Harrison	1890	52	1910	20	72	1910	72
Henry B. Brown.....	1836	Protestant	Mich.	Harrison	1891	54	1906	15	70	1913	77
George Shiras, Jr.....	1832	Presbyterian	Pa.	Harrison	1892	60	1903	10	71	1924	92
Howell E. Jackson.....	1845	Baptist	Tenn.	Harrison	1893	60	1895	2	63	1895	63
Edward D. White.....	1845	Roman Catholic	La.	Cleveland	1894	48	1910	16	65	1921	75
Rufus W. Peckham.....	1838	Episcopal	N. Y.	Cleveland	1896	57	1909	13	70	1909	70
Joseph McKenna.....	1843	Roman Catholic	Calif.	McKinley	1898	54	1925	26	81	1926	83
Oliver W. Holmes.....	1841	Congregational	Mass.	T. Roosevelt	1902	61	1932	29	90	1935	93
William R. Day.....	1849	Protestant	Ohio	T. Roosevelt	1903	53	1922	19	73	1923	74
William H. Moody.....	1853	Protestant	Mass.	T. Roosevelt	1906	52	1910	3	56	1917	63
Horace H. Lurton.....	1844	Episcopal	Tenn.	Taft	1910	65	1914	4	70	1914	70
Charles E. Hughes.....	1862	Baptist	N. Y.	Taft	1910	48	1916	5	54	1948	86
Willis Van Devanter.....	1859	Episcopal	Wyo.	Taft	1911	51	1937	26	78	1941	81
Joseph R. Lamar.....	1857	Ch. of Disciples	Ga.	Taft	1911	53	1916	4	58	1916	58
Mahlon Pitney.....	1857	Presbyterian	N. J.	Taft	1912	54	1922	10	64	1924	66
James C. McReynolds.....	1862	Disciples of Christ	Tenn.	Wilson	1914	52	1941	26	78	1946	84
Louis D. Brandeis.....	1856	Hebrew	Mass.	Wilson	1916	59	1939	22	82	1941	84
John H. Clarke.....	1857	Protestant	Ohio	Wilson	1916	59	1922	5	65	1945	87
George Sutherland.....	1862	Protestant	Utah	Harding	1922	60	1938	15	75	1942	80
Pierce Butler.....	1866	Roman Catholic	Minn.	Harding	1923	56	1939	16	73	1939	73
Edward T. Sanford.....	1865	Episcopal	Tenn.	Harding	1923	57	1930	7	64	1930	64
Harlan F. Stone.....	1872	Episcopal	N. Y.	Coolidge	1925	52	1941	16	68	1946	73
Owen J. Roberts.....	1875	Episcopal	Pa.	Hoover	1930	55	1945	15	70	1955	80

Members of the Supreme Court of the United States (Contd.)

Name	Birth		Religious Affiliation (Source: Library of Congress)	Appointment		Oath Taken		Service Terminated			Death	
	Place	Date		From	President	Date	Age	Date	Cause	Years Served	Date	Age
Benjamin N. Cardozo.....	N. Y.	1870	Hebrew	N. Y.	Hoover	1932	61	1938	death	6	1938	68
Hugo L. Black.....	Ala.	1886	Baptist	Ala.	F. Roosevelt	1937	51	1963	death	26	1963	77
Stanley F. Reed.....	Ky.	1884	Protestant	Ky.	F. Roosevelt	1938	53	1957	retired	19	1957	73
Felix Frankfurter.....	Austria	1882	Hebrew	Mass.	F. Roosevelt	1939	56	1962	death	23	1962	74
William O. Douglas.....	Minn.	1898	Presbyterian	Conn.	F. Roosevelt	1939	40	1969	death	30	1969	71
Frank Murphy.....	Mich.	1890	Roman Catholic	Mich.	F. Roosevelt	1940	49	1949	resigned	9	1949	59
James F. Byrnes.....	S. C.	1892	Episcopal	S. C.	F. Roosevelt	1941	62	1942	death	1	1942	63
Robert H. Jackson.....	N. Y.	1879	Episcopal	N. Y.	F. Roosevelt	1941	49	1954	death	13	1954	62
Wiley B. Rutledge.....	Ky.	1894	Unitarian	Iowa	F. Roosevelt	1943	48	1949	death	6	1949	55
Harold H. Burton.....	Mass.	1888	Unitarian	Ohio	Truman	1945	57	1968	death	23	1968	74
Tom C. Clark.....	Tex.	1899	Presbyterian	Ind.	Truman	1949	49	1968	retired	19	1968	69
Sherman Minton.....	Ind.	1890	Protestant	Ind.	Truman	1949	58	1968	death	19	1968	70
John M. Harlan.....	Ill.	1899	Presbyterian	N. Y.	Eisenhower	1955	55	1968	death	13	1968	69
William J. Brennan, Jr.....	N. J.	1906	Roman Catholic	N. J.	Eisenhower	1956	50	1968	death	12	1968	68
Charles E. Whittaker.....	Kans.	1901	Methodist	Mo.	Eisenhower	1957	56	1968	death	11	1968	67

¹ Professing Christian. ² Unitarian, then Episcopal.
³ Unitarian or Congregational.

Impeachments

U. S. Constitution, Article I, Section 2.

The Senate shall have the sole Power to try all Impeachments. When sitting for that Purpose, they shall be on Oath or Affirmation. When the President of the United States is tried, the Chief Justice shall preside: And no Person shall be convicted without the Concurrence of two thirds of the Members present.

Judgment in Cases of Impeachment shall not extend further than to removal from Office, and disqualification to hold and enjoy any Office of honor, Trust, or Profit under the United States: but the Party convicted shall nevertheless be liable and subject to Indictment, Trial, Judgment and Punishment, according to Law.

Federal Impeachments

Source: Congressional Directory.

The Senate has sat as a court of impeachment in the following cases:

WILLIAM BLOUNT, Senator from Tennessee; charges dismissed for want of jurisdiction, January 14, 1799.

JOHN PICKENS, Judge of the U. S. District Court for New Hampshire; removed from office March 12, 1804.

SAMUEL CHASE, Associate Justice of the Supreme Court; acquitted March 1, 1805.

JAMES H. PECK, Judge of the U. S. District Court for Missouri; acquitted Jan. 31, 1831.

WEST H. HUMPHREYS, Judge of the United States District Court for the middle, eastern, and western districts of Tennessee; removed from office June 26, 1862.

ANDREW JOHNSON, President of the United States; acquitted May 26, 1868.

WILLIAM W. BELKNAP, Secretary of War; acquitted Aug. 1, 1876.

CHARLES SWAYNE, Judge of the United States District Court for the northern district of Florida; acquitted Feb. 27, 1905.

ROBERT W. ARCHBOLD, Associate Judge, United States Commerce Court; removed from office January 13, 1913.

GEORGE W. ENGLISH, Judge of the U. S. District Court for the eastern district of Illinois; resigned office November 4, 1926; impeachment proceedings dismissed.

HAROLD LOUDERBACK, Judge of the U. S. District Court for the northern district of California; acquitted May 24, 1933.

HAROLD L. RITTER, Judge of the U. S. District Court for the southern district of Florida; removed April 17, 1936.

BREAKTHROUGHS IN SCIENCE

By

WILLY LEY

With an Introduction by

HUBERT M. EVANS

Professor of Natural Science
Teachers College, Columbia University

INTRODUCTION

The intellectual streams which constitute the worlds of science move ahead with amazing speed; amazing even to the working scientists. Scientific knowledge accumulates rapidly and the rate of increase is geometrical rather than arithmetical. It has been estimated that throughout the world around 30,000 scientific articles appear in journals every week. The reports in today's scientific journals, while presently only of interest to the scientists, provide the raw material, the groundwork for tomorrow's dramatic developments.

What is the citizen to do in the face of this avalanche of new knowledge, new ideas, new developments? There would be no need to raise this question were it not for the tremendous social, political, economic, and educational importance of science and technology. This surely is the inescapable fact in modern life throughout the world.

For the non-scientist—the parent, the citizen—the situation is not quite as impossible as it may appear at first glance. Within each scientific stream—atomic physics, bio-chemistry, genetics, electronics, radio-astronomy—there exists a relatively stable core of ideas and concepts. You may be confused by the pronouncements of the atomic physicist regarding the nature of the atom but you do have the concept, *atom*. This required more than 2,000 years for historic man to incorporate into systematic thought. The notion of an inertial framework may seem foreign, even esoteric. But again, the basic concept, *inertia*, is widely understood, at least on an elementary level. To clarify this concept took the genius of a Galileo and a Newton. The chemistry of plastics, a scientific and technical world in itself, is fundamentally based on the concept of the *molecule*, a

concept with which most adults, and children for that matter, are familiar.

The point to be noted here is that the culture in which we live is in possession of many of the basic concepts which underlie modern scientific developments. The problem is to re-interpret, modify and build on what we know. There are likely to be discrepancies in the scientific ideas we learned in school and college. At least some of these discrepancies must be removed if we are to come close to understanding modern developments in science.

The task which faces the present-day parent, while difficult, is not impossible. Excellent and helpful materials are available in books, the press, magazines and now in *Information Please Almanac*, which you will subsequently experience. Our children are exposed daily to modern scientific ideas and developments in school and through the mass media. To them, these ideas do not seem strange or esoteric for after all this is the world into which our children were born. It is the parents' world, too. "Keeping up with science" takes on the character of a mandate, a relatively new responsibility for the modern parent. That is, if our children are to receive adequate guidance during the period of their formal education and preparation for a career.

An ancient Greek philosopher observed that you cannot step into the same river twice. As Willy Ley leads you into the river of modern scientific thought and achievement do not expect to find exactly the same river you tried to "swim" in during your school and college days. But there is enough of the "old" to keep you afloat until you grasp the "new."

BREAKTHROUGHS IN SCIENCE

By Willy Ley

ATOMIC ENERGY

(Mr. Ley, the author of this section in the Information Please Almanac, has recently been appointed to a professorship at Fairleigh Dickinson University in New Jersey.)

DURING the four decades since the end of the first World War more scientific discoveries have been made and applied to daily life than in any preceding period. The most important of these discoveries was, of course, the release of atomic energy. Although its first application was a military one, the release of atomic energy is not purely a military matter.

No other scientific discovery or engineering accomplishment has exerted, and will continue to exert, such profound influence in literally every field, from economic planning to political thought and medical research.

In popular opinion, it seems, all atomic energy began with a letter written by a refugee scientist named Albert Einstein to the president of his adopted country, Franklin Delano Roosevelt. The letter was dated August 2, 1939. We'll quote portions from it later when the contents will be more understandable to the reader. Naturally the contents of this letter were not made public then; its existence was not even mentioned.

Groundwork Already Done

But while this letter was the beginning of a many-billion dollar project it did not mark the beginning of "atomic energy." In fact all the groundwork was done by that time; if it had not been, the letter could not have been written.

The rundown of the scientific thinking and the research which led to the release of atomic energy begins with the beginning of the current century.

When the twentieth century began physicists and chemists entered it with a firm conviction but also with a faint doubt. The firm conviction was that all matter consisted of smallest particles of a given and fairly small number. If somebody, say in 1902, had asked a professor of physics to explain this statement a little more he might have used a grain of ordinary table salt as an example. "If I crush this grain of salt with a spoon," he would have

said, "I'll get a fine powder composed of much smaller grains. But every tiny grain would still be salt. Under a microscope and with proper equipment, such a tiny grain might be crushed into still finer pieces, but each microscopic piece would still be salt. Finally, I would get the smallest bit of salt which is possible, a single molecule." ("Molecule" actually means "little bundle," it had been coined by the Italian chemist, Count Amadeo Avogadro.) "Nothing can be done to such a single molecule, still salt, by physical means anymore. But it can still be taken apart chemically; it then ceases to be salt and we would get one particle each of the metal sodium and of the gas chlorine. These are atoms, the smallest possible portion of the chemical elements."

The professor would have added that there are only 92 such chemical elements but not all of them have been discovered at the moment. At any event the smallest possible particle of an element was the atom.

That was the firm (and correct) conviction. The faint doubt was whether the name for this smallest possible particle was correct. The word atom was derived from the Greek *atomos* which means "indivisible." Maybe the atom was not as indivisible as its name said, possibly there was an analogy to the molecule of sodium chloride, or salt, which, when taken apart, ceased to be salt.

The Fogged Plates

The reason for this doubt about the indivisibility of the atom was an observation made by the Frenchman, Antoine Henri Becquerel. He had kept a compound of something called uranium in the same desk drawer with unexposed photographic plates and the plates had been fogged. It could only be the uranium which had done it. But how? This particular discovery, the first time atomic energy was noticed (1896), led to the discovery of two new elements by Pierre and Marie Curie, namely, polonium and, somewhat later, radium. And radium, when kept enclosed, produced a gas

which seemed to be helium. It was clear that the very heavy atoms did not stay unchanged, as a good atom should. This implied that the heavy atoms broke apart, so the atoms, in turn, had to have building blocks.

The first fact gathered was that one could do nothing about it. The radium atoms did break apart at a given rate. They could not be prevented from doing this by heat or cold or pressure or by electricity or magnetism. Nor could their breaking up be accelerated by any of these means. The rate of break-up was given. All one could do was to ascertain the "half-life" and it might as well be explained at this point why scientists, when it comes to radioactive substances, speak about the half-life. Why not the life? The reason is rather similar to the reason why you can speak of the average age of a population but not the age of the population.

Imagine that you have ten billion radioactive atoms of the same kind. They are slowly breaking apart, at a set rate, one now, another one next second. A million years later, say, only five billion atoms of the original kind are left; the others have turned into something else which probably is not radioactive and therefore stable. After two million years you have only two and a half billion of the original atoms left. After three million years their number has dwindled to one and a quarter billion, after four million years to 625 million, after five million years to 312 million and so forth. Even after many millions of years there would still be some of the original atoms left and, of course, the example could have started with a hundred billion radioactive atoms. One cannot, therefore, speak of a life-time, it is meaningless. But one can put down after what time half of the atoms will be gone; therefore it is the half-life which is important.

Once reasoning had gone to this point the geologists had a brand-new idea. So this uranium, the physicists say, has a half-life of 4,700,000,000 years, then it turns, probably through a number of intermediate stages, into lead. At one point helium is produced in the process. If this is so then the percentages of uranium, of helium and of lead in rocks should tell us how old these rocks are. There were great practical difficulties—especially since helium, being a gas, will leak out—but the dating of rocks by their natural radioactivity became a reality.

However, we have to go back to the physicists (and the chemists), their worries and their reasoning. An arrangement of the chemical elements according to

their chemical properties, made originally by Dimitri Mendeleeff in Russia, provided room for 92 different elements. More than 92 either were not possible for unknown reasons, or else this happened to be the number of elements which existed on earth. At one end of this list, which still showed quite a number of gaps that had to be filled in, there was the gas, hydrogen, as number 1. At the other end of the list there was a metal of virtually no commercial usefulness called uranium. That was number 92.

Atomic Numbers and Weight

These numbers are the so-called atomic numbers. The modern explanation of the atomic number is that this is the number of unit electrical charges which the core or nucleus of this particular element will carry. The nucleus of a hydrogen atom will carry a unit charge of 1, that of a helium atom will carry 2, the nucleus of an iron atom will carry 26 and that of an uranium atom 92.

In addition to the atomic number, every atom has an "atomic weight." This atomic weight (or mass) is the same as the atomic number only in the case of hydrogen. Element number 2, the gas helium, has a weight of four "atomic weight units," element number 26 (iron) has a weight of 56 units and number 92, uranium, even of 238 units. Or rather, it would have been nice if these weights had been such nice round figures. Actually they were not. It became established custom to use the mass of the oxygen atom, namely 16, as a standard and to consider the unit weight to be $1/16$ th of that of oxygen. But then hydrogen came out to have a mass of 1.008, the element boron (atomic number 5) had a mass of 10.82, iron had a mass of 55.58 and uranium of 238.07.

When such atomic weights were first determined, it struck several people that the figures were very nearly multiples of the mass of hydrogen. Was it possible that hydrogen was the only true element and that all others were just clusters of hydrogen atoms? It was an interesting idea, only marred by the fact that the figures could not be made to balance properly. If you considered 55 hydrogen atoms clustered together to form an iron atom, its mass should be 55.44, instead of the slightly higher value found by the experimenters. Of course one could always blame the discrepancy on experimental errors but as time went on and the experiments were repeated over and over again this excuse grew weaker and weaker. Besides if the iron atom consisted of 55 hydrogen atoms its atomic number should be 55.

But everything known pointed to it that the number had to be 26. In short, the idea did not work.

Later other work—largely devoted to answering the question: "just what is electricity"—led to postulating an "atom" of electricity, the smallest electrical charge possible. This particle was called *electron* and it became clear that the atomic number of an element was the same as the number of the electrons per atom. If so, how did an atom look?

Make-up of the Atom

Niels Bohr in Denmark then published his ideas which fit together all the known facts and set the foundation for everything else that was to follow. Every atom obviously had a nucleus around which the electrons revolved like planets around the sun. The nucleus had all the mass and in the case of the hydrogen atom it consisted of just one particle. This particle was called the *proton*. It carried one *positive* unit charge. Around the proton there moved one electron, carrying one *negative* unit charge and having a negligible mass. Now element number 2, helium, had two electrons moving around the nucleus. Since its mass was four units, its nucleus had to consist of four protons. Four protons, however, means four positive charges. Two of them were neutralized by the two electrons going around the nucleus. What happened to the other two? Bohr suggested that there were two more electrons in the nucleus itself to take care of the charges of two of the protons. This reasoning accomplished one thing which had been puzzling, namely why atomic number and atomic weight did not agree.

But it went farther. It could also explain why the atomic weights were very often not multiples of the proton weight. Let's look at element No. 17, the gas chlorine. Its atomic weight was very nearly $35\frac{1}{2}$ units, the small deviation from this figure could still be explained as an experimental error. How could one get an atom with a weight in which half a unit figured? Well, one could get such a weight as an average if one assumed that there were two kinds of chlorine atoms. One kind had a nucleus consisting of 36 protons and 19 electrons which left 17 positive charges which were neutralized by 17 electrons moving around the nucleus. The other kind of chlorine atom had a nucleus consisting of 35 protons and 18 electrons, also leaving 17 charges and 17 electrons on the outside. If these two kinds of chlorine atoms existed in about equal numbers the average weight of the chlorine atom would appear to be $35\frac{1}{2}$.

A chemist would never be able to tell

these two kinds apart because both nuclei are surrounded by 17 electrons and chemical reactions depend on the number and the arrangement of the electrons outside the nucleus. But a physicist could tell them apart because one would weigh 36 units and the other 35 units. For such (then still hypothetical) chemically alike but physically different atoms a new name was needed. It became *isotope*,—meaning "in the same place" (in the chemical table of the elements).

Later it was found that the two isotopes of chlorine weigh 35 and 37 units and that the heavier one is rarer than the lighter one. Together they account for the measured value of 35.457.

Alpha, Beta, Gamma

While Niels Bohr's reasoning pointed out what one might look for, Lord Ernest Rutherford started looking, using naturally radioactive material (radium) imbedded in a deep hole in a block of lead. He found, that three different kinds of rays shot out of the hole and he labelled them *alpha*, *beta* and *gamma* rays. These three rays bore a strong resemblance to what came out of a gun barrel when it was fired. There was a heavy something, his alpha particle, corresponding to the projectile. Then there was something much lighter, the beta radiation, corresponding to the smoke and something immaterial, the gamma rays, corresponding to the flash. We now know that there was a duplication of names. The alpha particle was really the nucleus of a helium atom, the beta "rays" were just electrons while the gamma rays were really rays of the same general type as the X-rays which Professor Konrad Roentgen had discovered decades earlier.

Even the nicest theoretical reasoning is less impressive than a successful experiment—this goes for both scientists and laymen—and Lord Rutherford could show one. Throwing alpha particles at nitrogen atoms he could produce a transformation, the result was oxygen and hydrogen. That was just after the first World War. Experimental proof was now established that atoms had building blocks in turn and that re-arrangements of these building blocks did not only take place in the very heaviest atoms but could be caused in much lighter atoms. With sufficient refinement (or with different experiments) one should be able to observe an energy release. A number of years earlier, in 1905, there had been correspondence between an unknown young physicist, Albert Einstein, and the French mathematician, Jules Henri Poincaré. The idea that mass and energy might be the same thing was

in the air for a very few progressive thinkers and Poincaré suggested to Einstein that the speed of light should be accepted as the "limiting value." Einstein did accept it and a year later his famous formula

$$E = mc^2$$

emerged, E being the energy, m being the mass and c being the velocity of light.

During the ten years that followed Lord Rutherford's destruction of nitrogen atoms, "nothing much happened" as far as the outside world was concerned. What actually happened during that time interval was that physicists probed the various problems mathematically. Now, in 1958, everybody is slightly startled to learn that a highly technical paper was published in 1929 which proved that "fusion," the combination of lighter atoms to form heavier atoms, should exist in Nature. This was the very first hint of future hydrogen bombs.

The big year was 1932.

In that year, two associates of Lord Rutherford, J. D. Cockcroft and E. T. S. Walton, split another atom, namely that of the light metal, lithium—atomic number 3, atomic weight 7. They made a little target of lithium metal and fired protons, or hydrogen nuclei, into it. Now when a proton of unit mass 1 joined with a lithium atom of mass 7 a new atom of mass 8 was the result. The atomic number of this new atom would have to be 4. Of course there is an element number 4, namely beryllium but the mass of the beryllium atom is 9. For some reason an atom of mass 8 cannot exist, so it broke into two equal parts, producing two alpha particles or helium nuclei, atomic number 2, atomic weight 4. Each, that is. The purpose of the experiment had been to check on Einstein's equation. It also accomplished the transformation of lithium and hydrogen into helium.

Enter the Neutron

During the same year Sir James Chadwick realized that some of the experiments had produced results which could not be explained just with protons and electrons. There had to be, he said, another particle which must have the same mass as the proton but not carry an electrical charge of any kind. Since it was electrically neutral he called it the *neutron*. The neutron at once removed some of the difficulties of Bohr's pioneer concepts. Many physicists had not been able to see how protons and electrons should or could exist side by side inside the nucleus. Well, they didn't. What the experiments indicated was that some of the protons

had absorbed a negative unit charge, i.e. an electron. The proton then carried both, one positive and one negative charge, which means to say no charge at all. And that was the neutron. All the diagrams had to be re-drawn; now the alpha particle consisted of two protons and two neutrons.

During the same year Prof. Harold C. Urey, then of Columbia University, isolated one of those isotopes which had been talked about for almost 20 years as a theoretical necessity. Remember that the strange weight of the chlorine atom had been explained by postulating two chlorine isotopes, weighing 35 and 36 units, respectively. But there was very little hope of being able to separate them. It could not be done chemically, for chemically they were alike. Physically there was this minor weight difference of one unit (—actually two, as was found later—) which looked too small to be useful. Now if there were two isotopes of hydrogen it would be different. The heavier hydrogen (provided it existed) could only have a weight of two units since its nucleus would contain a neutron in addition to a proton. Hence it would be twice as heavy as the light isotope. Being that much heavier it was bound to be a little more sluggish. The first experiment consisted in making a gallon of liquid hydrogen and then permitting it to evaporate very slowly. The lighter hydrogen might evaporate a bit faster, leaving more of the heavier atoms behind. When the gallon of liquid had shrunk to one gram (1/28 of an ounce) the residue was tested, there was a heavy hydrogen isotope. It was named *Deuterium*.

Radioactivity Produced

During the same year J. Frédéric Joliot and his wife Irène Curie (daughter of Pierre and Marie Curie) bombarded an aluminum target with alpha particles. Neutrons bounced out of the aluminum plate so the reaction must have been this: a helium nucleus (weight 4) united with an aluminum nucleus (weight 27) and a neutron was thrown out so the new nucleus weighed 30 units. This was an isotope of phosphorus (normal weight 31). Then they removed the unit which had provided the alpha particles. But the aluminum plate continued to throw out particles. For the first time radioactivity had been produced artificially! Moreover the particles were new too. They were like electrons, but their charge was positive instead of negative. They were *positrons*, predicted a few years earlier by Dirac.

Near the end of 1932 I attended a lecture with a title like "The Transformation of the Atomic Nuclei" at the Engineering

Building in Berlin. The speaker had not yet heard about Dr. Urey's heavy hydrogen and spoke mostly about the experiment by Cockcroft and Walton (and about German work by a Professor Miethe) and he came to this conclusion: the transmutation of one element into another is possible, as has been proved. Whether it would be of practical use remained to be seen, but even with an optimistic view one could not expect transmutations to exceed a very few grams of material. As for energy from the atom some experiments had shown that energy was released as predicted but they had also shown that you had to put in more energy by far than you could get out. Hence atomic energy, though it existed, had to be classed as an "untappable source."

Practical or not, physicists continued their experiments, bombarding targets of various metals with alpha particles or with deuterons, the nuclei of heavy hydrogen. They created tiny amounts of elements not to be found in Nature, known elements but of the wrong atomic weight. All these elements tried to adjust their abnormal balances of charge and weight, which they did by shooting particles out of their unstable nuclei. They were radioactive versions of common and harmless elements and were called radio-isotopes. By 1937 not less than 190 such radio-isotopes had been produced, with half-lives ranging from a few seconds to a few score years. The old problem of influencing the rate of radioactive decay had found a surprising solution. You still could not change the half-life of any radioactive substance but you might be able to make one with the half-life you needed.

How About Uranium?

Professor Enrico Fermi had his own ideas. By firing neutrons into aluminum you could "fatten up" the harmless aluminum nucleus into a radioactive phosphorus nucleus. Now what would happen if you try to fatten the element uranium which is the heaviest extant in Nature. One possibility was that uranium simply would not accept any additional particles since for reasons still to be found nothing heavier was possible. Or else uranium did accept additional particles, then you would get elements beyond uranium, elements with higher atomic numbers than 92, so-called *transuranic elements*. What would happen could not be predicted by theory. There just was no theory. It had to be tried. And Fermi did try.

The result was completely incomprehensible. All of a sudden there were four radioactive elements around, with half-lives of 10 seconds, 40 seconds, 13 minutes

and 90 minutes. Such short half-lives proved that these elements decayed with enormous speed, in the case of the first it took just ten seconds for half of the atoms created to decay into something else. These elements were *most* active, just what one might expect of transuranic elements. One could expect this just because they were not found in Nature. If they had ever existed they were gone by now, they were "extinct elements."

Actually this had been the breakthrough experiment.

But it took five years of working, thinking and calculating to realize what had happened. Several teams of researchers went after the "transuranic elements" of Fermi. One of them was a team at the Kaiser Wilhelm Institute in Berlin, composed of Dr. Otto Hahn, Dr. Fritz Strassmann and Dr. Lise Meitner. The outcome of such an experiment always looked as if there were a dozen or more elements, all radioactive isotopes but all resembling known elements chemically. The German team concentrated on one which they took to be a new isotope of radium. They had to add barium for purposes of chemical separation and things were narrowed down to the point where the radioactive element had to be either barium or radium. Of course they guessed at radium which was far more reasonable. But then one experiment proved that whatever was active was *not* the radium. So it had to be barium, element No. 56 and a hundred units lighter than uranium. In January 1939 Hahn and Strassmann (Dr. Lise Meitner, being Jewish, had left Germany in the meantime and gone to work with Niels Bohr) published the statement that neutron bombardment of uranium caused barium to form.

Fission at Last

Slowly the fantastic truth began to dawn on the researchers. Uranium refused to "fatten" and if force-fed it just broke apart into nearly equal halves. Nothing like that had ever been happening to physicists and they did not even have a word to describe it. They had to borrow a term from the biologist's vocabulary. There are single-celled animals which, when they grow too large, split into two independent individuals. This is called *fission* and the same term was applied to the overfed uranium nucleus.

The researchers suspected then that there might be complications and they were perfectly correct. Now we know what really goes on. There are three uranium isotopes, one weighing 234 units (very rare) another weighing 235 units (rare)

and a third weighing 238 units, the common one. Because uranium-234 is so rare, research concentrated on the other two. They did not behave alike. Uranium-235 could not tolerate an additional neutron and broke apart. Uranium-238 could be fattened, just as Fermi had hoped. By accepting one more neutron its weight increases to 239, still uranium, but far less stable than uranium-238. Then one neutron in its nucleus shoots out an electron. By this process that neutron changes into a proton and now the nucleus has 93 positive charges. This makes its atomic number 93 even though its weight is still 239 units. Number 93 is beyond uranium and a new element not existing in Nature. Since the planet Neptune is beyond the planet Uranus this new element beyond uranium was called *neptunium*. But neptunium is very unstable, it almost at once shoots another electron from its nucleus, another neutron turns into a proton and the number of charges rises to 94. Beyond Neptune there is the planet Pluto, hence this was called *plutonium*.

Element No. 94, plutonium, still weighing 239 units, turned out to be the most interesting of all. It is a metal which looks like lead. It is radioactive as all nuclei weighing more than 209 units are. But it is reasonably stable with a half-life of more than 10,000 years. If force-fed with another neutron it fissions. If left to itself it will, after a while, shoot out an alpha particle and turn into uranium-235, which is fissionable too. It is the atom bomb element.

Einstein Writes to F.D.R.

Scientists did not know this yet in the summer of 1939. What they did know was that uranium-235 will fission when hit by a neutron and that, most important discovery of all, the fission of one such atom will release several free neutrons which will set off other atoms and so forth. This was a chain reaction, very much like cars piling up on a busy highway. But it should take only a very tiny fraction of a second to be completed.

Only after the facts of uranium fission and the probability of a chain reaction had become known in scientific circles, could Professor Einstein write to the President of the United States. His letter, incidentally, was not mailed; it was delivered in person by the economist, Alexander Sachs, who acted as emissary.

"In the course of the last four months," Professor Einstein dictated in his slow and halting English, "it has been made probable through the work of Joliot in France, as well as Enrico Fermi and Leo

Szillard in America, that it may become possible to set up a nuclear chain reaction in a large mass of uranium by which vast amounts of power and large quantities of radium-like elements would be generated. Now it appears this could be achieved in the immediate future.

"This new phenomenon would also lead to the construction of bombs, and it is conceivable, though much less certain—that extremely powerful bombs of a new type may thus be constructed. A single bomb of this type, carried by boat or exploded in a port, might very well destroy the whole port, together with some of the surrounding territory . . ."

What happened as a result of this letter is well known.

First, the Manhattan Project which was the forging, on the largest possible scale, of the engineering tools for making the laboratory discoveries practical. Then the first test bomb in New Mexico. Then two operationally used bombs which "gave away the secret"—for all that physicists all over the world needed was a demonstration that it could be done. And a long series of tests since.

All the things which somebody, at one time or another, declared to be either impossible or at least impractical, have been done and found to be practical. An abbreviated list would read about as follows:

Explosive energy from the atom. Has been accomplished by several methods, by the fission of uranium-235 and plutonium-239 and by the fusion of very light elements (e.g. heavy hydrogen) into helium.

Peaceful energy from the atom. Has been accomplished by fission in both stationary and sea-going powerplants. The working principle is to heat a metal of low melting point in the atomic reactor. This metal heats working water into steam, the steam drives a turbine. Then the working steam is re-condensed into water and returns to the heat exchanger where newly heated molten metal is waiting for it. Atomic energy is especially promising for sea-going vessels, on land it cannot yet compete with water power or coal except in coal-less underdeveloped areas. Research to develop a powerplant based on fusion is underway.

Transmutation of elements. This is the ancient alchemist's dream, the production of one element from other elements. It can be done in an atomic reactor by exposing materials to the radiation. Sometimes the material is exposed just to test its resistance, sometimes to change stable nuclei into radioactive isotopes of other elements for research purposes. These are the so-called *Tracers*. Their use is best explained by an example. It is known that iodine, ingested

with food or drinking water, ends up in the thyroid. But which way does it travel through the body and how long does it take? By making a few iodine atoms radioactive their path can be traced.

Creation of Transuranic Elements. In addition to the two wartime transuranic elements 93-neptunium and 94-plutonium other heavier ones have been created, usually in tiny quantities. They are: 95-amerium, 96-curiu, 97-berkelium, 98-californium, 99-einsteinium, 100-fermium, 101-mendelevium and 102-nobelium.

Dating the Past with the Aid of Atoms

One of the most interesting offshoots of atomic theory (not atomic energy) is a method for dating the past. It has been mentioned that the gradual decay of uranium into lead suggested the possibility of dating ancient rocks which is the reason why we now know that the earth must be around 3,500 million years old or why we can say with confidence that a lump of coal formed about 400 million years ago.

Unfortunately this method could not be used when it came to relatively short time intervals like historic times or immediately pre-historic times. The uranium-lead method—or the thorium-lead method—were as unsuitable as would be the mileage indicator of a car for measuring the length of a trouser leg or the width of a desk. For measuring the lengths of periods too small for the geologist another system had to be found. It was originally developed by Drs. J. R. Arnold and W. F. Libby (then both of the University of Chicago) soon after the end of the second World War and it depends on an isotope of carbon which is called radio-carbon, or carbon-14 or just C-14.

Ordinary non-radioactive carbon has a weight of 12 and carries 6 unit charges. Ordinary non-radioactive nitrogen has a weight of 14 with 7 unit charges. Cosmic rays collide with nitrogen atoms in the atmosphere and transform them into carbon atoms with 6 unit charges and a weight of 14 units. Such an atom is not stable, it slowly decays and it has a half-life of 5,568 years (with an uncertainty of plus or minus 30 years). In short there is a "normal" amount of C-14 in the atmosphere. This doesn't do anything to a piece of basalt, but living things, both plants and animals, absorb some C-14. They are, therefore, radioactive to a certain mild "normal" degree.

So a living tree, let us say, has this degree of radioactivity because of C-14. Then the tree is felled, it ceases to live and ceases to absorb C-14 from the atmosphere.

Research into the Structure of Matter. We now know that the following sub-atomic particles exist: the proton (heavy with positive charge), the neutron (heavy without charge), the anti-proton, also called negatron (heavy with negative charge), the electron (of negligible mass with negative charge), the neutrino (same mass, no charge) and the positron (same mass, positive charge). In addition to these a large number of particles called mesons are known; research is continuing to clear up a picture which is somewhat confusing at the moment.

The amount it took on while it was alive slowly diminishes by changing into non-radioactive atoms. Fifty-five centuries after the tree was felled its radioactivity from C-14 would be just half of what is found in living wood. It does not matter, incidentally, whether the wood has rotted away in the meantime or has been burned; that does not touch the atoms.

By simply checking on the C-14 content it is possible to determine the age of an object which was once alive. You could date a mummy, or an old wooden beam, the leather handles on an old shield or the bone handle of an old sword—but not its blade. There are two limits, at both ends of the time scale. A piece of wood less than a century old will hardly produce a reading differing from that of a piece of wood less than a year old. And after 24,000 years have gone by the C-14 content has become so small that one can only say that it is older than this figure. (A recent refinement claims to have pushed the limit to 30,000 years.)

A practical limitation is given by the fact that the specimen is destroyed in the process of checking for C-14 content so that the method cannot be used for rare specimens.

The first actual datings were carried out on pieces of known age to see how well the historical date and the C-14 date would match. Since then all kinds of things have been dated; for example, charcoal from a sacrificial pit at Stonehenge (age about 1800 B.C.), charcoal from the famous Lascaux cave in France with its pre-historic animal paintings (age about 13,500 B.C.); a deer antler found in a mound in Kentucky (age about 3000 B.C.) and dung of the (now extinct) giant sloth from a cave near Las Vegas, Nevada (age about 8500 B.C.).

The C-14 method has provided us with a time-yardstick that will give good enough dates in many cases where we would be completely helpless without it.

APPLIED PHYSICS AND ENGINEERING

Rockets, Jets and Sonic Barrier

WHILE MANY OF THE things people are in the habit of considering "brand new" merely grew up in the four decades since the end of the first World War, rockets and jets actually are brand new. It is true that the fireworks rocket has existed since about 1200 A.D. and that both Germany and Russia can boast an early rocket pioneer at around the turn of the century. But the real development began twenty years later. The first scientific work on rocket propulsion was written by an American, the physicist Dr. Robert H. Goddard. It bore the title *A Method of Reaching Extreme Altitudes* and was published by the Smithsonian Institution in January 1920. (The title page says 1919, but it was not released in that year.) It was a slim volume of less than 100 pages, most of it mathematical derivations and tables. To condense the contents of such a book into a single sentence is not easy but one may say that Goddard proved that rockets should have a great future if time and effort were devoted to their development. Goddard did not make any suggestions as to what should be built—nobody knew then—but he envisaged the possibility of carrying scientific instruments to the limit of our atmosphere and he did make a calculation of what it would take to shoot to the moon.

Three years later another book on the same general idea was published in Germany by the Transylvanian mathematician Prof. Hermann Oberth. Like Goddard's work it talked about rockets. Like Goddard's work it was a small book. Like Goddard's work, it was full of mathematics, in fact more so. But there all resemblance ended. Oberth insisted on the use of liquid fuels; Goddard had mentioned them just once and talked about solid fuels. Oberth gave detailed calculations of assumed liquid fuel rockets and made many suggestions of how they could be constructed. Of course the high-altitude research rocket was his first goal too, but he paid a great deal of attention to piloted rockets and made the first suggestion of a manned, artificial satellite.

Off Ground in 1926

These two books established the theoretical background. The next step was to see whether it could be made to work. Goddard got his first liquid fuel rocket off the ground in 1926 but did not publish anything about his work until the second Smithsonian report in 1936. In Germany

a society was founded for the purpose of raising money for rocket experimentation and doing the experimenting. The society got its first liquid fuel rocket off the ground in 1931. By that time a similar society had been founded in New York under the name of American Interplanetary Society. This society is now, under the name of American Rocket Society, the largest society of professional rocket engineers in the world. (The British Interplanetary Society runs second, the re-constituted German society third.)

In retrospect it is clear that Dr. Goddard was ahead of everybody else in practical experimentation until about 1934. But then the Germans forged ahead, because in Germany the military had taken an interest in rocket research. The rocket research station of the German Army at Peenemünde on the island of Usedom in the Baltic Sea was the first institution to produce a rocket which exceeded the speed of sound. This was the first V-2 rocket that worked properly—it was the fourth built, No. 2 and No. 3 did not work, No. 1 was never tried—and which travelled a distance of 113 miles. As a result of the German rocket work a high altitude research rocket, capable of rising to altitudes of 100 miles or more with a ton of payload, was available to American scientists beginning in 1946. Since then high-altitude research rockets of many different designs are in steady use.

After the second World War, and especially in America, much attention was paid to solid fuels, mostly because a solid fuel rocket is a finished unit that can be stored like, say, a cartridge. Fuel chemists have produced a number of completely new rocket fuels which are safe and powerful. In spite of these advances in the field of solid fuels liquid fuels still play an important rôle. To begin with they still hold a small edge as far as power per pound of weight is concerned. It is generally conceded, even by the solid fuel experts, that any piloted rocket must be propelled by liquid fuels. And even in the guided missile field the liquid fuels are still very important. A liquid fuel rocket has a much longer burning time than a solid fuel rocket which means that there is much more time for the guidance equipment to work. And with more time to work the guidance can naturally be more accurate.

The best results achieved—as far as distance fired goes—can be claimed by a combination of liquid and solid rockets, namely the Army's Jupiter C which

reached a distance of 3,300 miles in November 1956. The high-altitude record seems to belong to a solid fuel research missile, the X-17. One of these research missiles did not go into the prescribed arc for testing but simply kept climbing. Since this was an unexpected performance, it was not tracked, but calculations indicate that it must have reached 1,000 miles.

Sputnik, the Russian Earth satellite, revolves at a lesser altitude.

While rocket development during the second World War was almost all German and atomic energy development was almost all American, the development of the jet plane was a race between the Germans and the English. To engine experts it had been clear since about 1930 that the development of a jet engine depended on the successful operation of a gas turbine. The arrangement of the parts of a jet engine is always about the same. Right behind the air intake hole you have a rotary air compressor which compresses the air sucked in. Then you have a, or usually several, combustion chambers where the fuel is sprayed into the air and burned; then you have the turbine wheel which is turned by the combustion gases (and which powers the air compressor) and then you have the exhaust nozzle. The man who invented the first successful British jet engine, Air Commodore Whittle, took out his first patent in 1930. His engine ran for the first time in April 1937 and the first flights of British jet aircraft were made in May 1941. The first flight of an American jet (with American-built jet engines of the British pattern) took place on October 1, 1942. (By sheer accident this was just two days before the first successful German V-2 shot of their No. 4.) The dates for comparable accomplishments with jet engines and jet planes in Germany are roughly the same as the British dates. One side tested its first engine a few months earlier than the other but then lagged behind by a month or two on the first flight.

But the jet planes of both sides (and a rocket propelled interceptor, the Messerschmitt 163B which the Germans threw into the fray) were all subsonic. No designer yet dared to have his aircraft come too close to the speed of sound. It was expected that something would happen at the speed of sound, but nobody could be certain what it would be.

Strangely enough, theory, expectations and experience did not go together at all. Theory was not too certain what could be predicted. But all artillery shells, and later on all V-2 rockets, moved faster than sound which was a strong indication that it could be done. On the other hand airplanes which in power dives had come

close to the speed of sound suffered severely from what was then called "compressibility effects." The attempt of making a supersonic airplane was postponed until after the war. The first supersonic airplane was the liquid rocket propelled Bell X-1 and it made its first supersonic flight on October 14, 1947. Nothing drastic happened, the pilot (Charles E. Yeager) could tell that he was moving faster than sound by looking at his instruments.

The Sound Barrier

Because so much nonsense has been written about "breaking the sound barrier" it might be advisable to devote a little space to supersonic flight.

Supersonic flight means, of course, to fly faster than sound travels through air. The speed of sound in air depends on one thing and one thing only: the temperature of the air. In normal warm air it is 760 miles per hour. At a greater height, say 45,000 feet for the sake of naming a figure, the speed of sound is 660 miles per hour, *not* because the air is thinner, but because it is colder up there. It follows that a plane which is subsonic 1,000 feet up is supersonic when 40,000 feet up, even though it flies with the same speed. Because the speed of sound changes with temperature—and seemingly with altitude but merely because the air is invariably colder high up—one would always have to specify two things: the speed of the airplane and the speed of sound at the altitude it happens to be. To simplify this the concept of the Mach number has been introduced, the name is given in honor of the Austrian physicist E. Mach who was the first to study such problems. If the airplane speed and the speed of sound at the altitude where the plane flies are equal you say it flies with Mach 1, or $M = 1$. If the plane flies at half the speed of sound it flies with $M = 0.5$, if it flies twice as fast as sound it flies with $M = 2$.

The research plane X-2 did fly with $M = 2$. It can be done, it has been done. Now how did this talk about planes being badly shaken even below $M = 1$ (at about $M = 0.75$) come about? Well, when a plane flies, the airstream moves at different speed over different areas of the airplane. Near the speed of sound the airflow over the wings may already be supersonic but still subsonic around the fuselage. A control surface, when it is moved, may have subsonic flow around one side and supersonic around the other side. It is the speed range of confused flow patterns of the air, called transonic range. So far we do not know how to fly in the transonic range but we do know that things are quiet

again once the airflow is supersonic around every portion of the plane. The current answer to the problem is simply to keep accelerating until safely supersonic.

It seems to be one of the established wrong beliefs that the sonic boom can be heard when a jet plane becomes supersonic. It sounds so "logical," if you crash through a barrier you are bound to make noise. Actually there is no real barrier and the noise is created even when the plane is still below $M = 1$.

To understand this let us first consider an ordinary airplane flying at, say, 200 miles per hour. Since the noise it makes travels at 760 miles per hour the noise runs ahead of the plane. You hear it coming, first faintly, then louder, then it roars overhead and then the noise peters out. Now we'll look at a jet flying with very nearly the speed of sound. To begin with the jet is somewhat noisier, but we can leave this fact out. Whatever noise this jet plane will make cannot run ahead of the plane for the plane moves just about as fast as the noise it produces. If you

watch it and see it coming you will hear absolutely nothing, the noise cannot outrun its source. You, the observer, are still in what Prof. Theodore von Kármán has dubbed the "no signal area." But now the jet is very nearly overhead and the sound it makes moves with it almost like a wall. There is no gradual build-up, suddenly the sound hits you and it then has all the subtlety of a cannon shot.

If the plane flies faster than sound, the noise it produces cannot even keep up with it, for sound can travel only with the speed of sound. The result is that all the noise trails behind the plane like a comet's tail. The noise is confined in a conical space (called the Mach cone), with the plane at its apex. Again you could not hear a thing if such a plane passed overhead; it might be almost out of sight when the Mach cone finally swept over the observer on the ground. He would then be hit by well-concentrated noise, and would probably tell his wife that he had just heard an airplane "crash through the sound barrier."

RADAR

RADAR is one of the three major technological developments of World War II, the other two being the atomic bomb and large liquid fuel rockets. Though it is true that the public did not learn anything about radar until rather late during the second World War it is somewhat older and, as the story of a breakthrough, it resembles atomic energy to a certain extent.

Radar works with very short radio waves and these radio waves constitute a breakthrough themselves, although prior to the period under consideration. It was in 1873 that the Scottish physicist, James Clerk Maxwell, published his *Treatise on Electricity and Magnetism* in which he pointed out that there should be electromagnetic waves which should show the same behavior as light. About a dozen years later, Heinrich Hertz produced such electric waves—for a number of years they were actually called Hertzian waves—and measured wavelength and velocity. He also showed experimentally that they could be reflected by suitable "mirrors" like light waves. It was this work of Hertz which is the foundation of radio in all its forms, including television and radar.

Marconi's Prophecy

A large number of scientists and experimenters went to work on the practical application of these waves, the most successful of them being the Italian Marchese

(marquis), Guglielmo Marconi, who communicated by such waves across the English Channel in 1898. It is a matter of historical record that Marconi prophesied radar. During a lecture delivered about 1906 he spoke of the fact that radio waves are reflected by solid objects and that at some future date this fact might be utilized "to detect obstacles at sea, either in bad weather or at night." At about the same time a German engineer applied for and obtained patents in several countries for just such a device. We now know that it would not work, or only very poorly, if it were actually built. Marconi may have said what he said in defense of the principle.

Marconi returned to this theme in 1922, strongly urging development of such a device. By a coincidence, two American scientists, Drs. A. Hoyt Taylor and Leo C. Young, obtained an accidental practical demonstration during the same year. Sending radio signals across the Potomac River, they noticed what is called a "phase shift" (distortion) of the received signals because a small wooden steamer got in the way. They suggested to the Navy that this be utilized at sea, if a line of destroyers sent such signals to each other they would be "immediately aware of the passage of an enemy vessel between any two destroyers of the line, irrespective of fog, darkness, or smoke screen." During the summer of 1930 it was found—also accidentally—that

an airplane was large enough to reflect radio waves. (Reading this statement now will cause a smile to anybody who knows that near the end of the second World War, American radars succeeded in picking up German three-pound mortar shells in flight.)

Early Airplane Detection Methods

The Director of the Naval Research Laboratory at once informed the Navy Department that an airplane did reflect radio waves and the laboratory was ordered to go ahead. The method involved was to have two stations, one sending and one receiving. When the plane was overheard somewhere between these two stations the receiving station received a signal twice, once directly and once as reflected by the plane.

The radar story differs from the story of atomic energy in that the fundamental fact was known. Nor was it a question of finding the proper explanation for observed natural phenomena. It was mostly the problem of coping with a major difficulty provided by Nature herself, namely the enormous speed with which radio waves travel. It is the same as the speed of light, 186,000 miles a second. If the reflecting obstacle were 1,000 yards away, a "single wave" would need just about three millionths of a second to get there—since its speed is 328 yards in one millionth of a second—and another three millionths of a second to return. If you wanted to find the distance to an obstacle in that manner, you had to measure time intervals of a few millionths of a second and measure them accurately. Small wonder that the early researchers were satisfied with establishing the presence of an obstacle.

The method of detecting aircraft by radio waves worked out by the Naval Research Laboratory was made known to the Army in 1930 and two years later it was officially suggested that it might be better suited for Army use, since it needed two rather large stations which were more likely on land than on shipboard. But the Army looked in several directions at once and the Army's man in charge, Colonel (ret.) William R. Blair, was not at all satisfied with the airplane detecting device, a sound detector, then in use. He decided that better detection methods should be possible. One possibility was to utilize the fact that any engine is hot when running (heat or infra-red detection). Another one was by radio waves. It is now known that Colonel Blair must have made an important invention in the field of radar at that time, for he was granted a patent in 1957 which had been delayed for security reasons. The Army, beginning in

1930, did get echoes from targets such as ships and planes. But the echoes were weak and the targets had to be near. The very short radio waves which could be generated then just were not powerful enough to work well. As a matter of fact for several years the infra-red detectors gave much better results.

The breakthroughs consisted in both the development of a device for generating more powerful micro-waves (the so-called cavity magnetron) and in changing the approach. A normal radio transmitter, with a directed beam, may be compared to a fire hose, it squirts a continuous stream. This continuous stream has a strong tendency to drown out echoes, or at least to make their reception quite difficult. Needed was a device that could be compared to a machine gun, not a continuous stream but a succession of what has been named "pulses" with pauses in between. Such a device was already in use as a scientific research tool; Drs. Gregory Breit and Merle A. Tuve of the Carnegie Institute had been using "pulse ranging" since 1925 to measure the height of radio wave reflecting layers in the upper atmosphere.

The idea of using "pulse ranging" for aircraft and ship detection must have occurred to physicists virtually at the same time. After the war it became known that England, France, Germany and the United States began working out this particular method in the early thirties. Japan, incidentally, started work at the same time, but seems to have discontinued it later. The systems finally used differed from each other mainly in the wavelength used, the Germans (and at an early date the British) used 10 centimeter waves, the Americans 3 centimeter waves. America started in 1933.

The Pulse System

The pulse system consists in sending out a "burst" of waves for a very short time, say one millionth of a second. Then the transmitter waits for "a little while"—three or four thousandths of a second—and then comes the next burst. Since the interval between pulses is several thousand times as long as the duration of the pulse, the returning echo will hardly be received at the instant another pulse is sent out. Hence there is no interference with the detection. What is more important from the practical point of view was that pulse emission permitted putting transmitter and receiver on the same ship (and later on the same airplane). Moreover transmitter and receiver could even share the same antenna which, in time, evolved into the wellknown radar "dish."

Though the radar—the name, incidentally

tally, is a coined word, from radio detection and ranging—worked well there was always the same natural problem. It was a little bit like carrying on a conversation in a moving railroad car, over wheel clatter, locomotive whistles and the talk of other passengers. There was always natural, random radio noise and if you magnified the echo you magnified the random noises, too. Radio engineers thought this had to be accepted and radar operators did the best they could under the given conditions.

Radio Astronomy

Sciences always spill over into each other. Of course not every discovery made in one field will influence all other fields but it is sure that at least one in ten discoveries made in a specific field will not only influence another field of science but even acquire an outstanding value in that field. In the period under survey both atomic energy and the technology of modern electronics have had an influence on the apparently remote science of astronomy, one explaining an old puzzle, the other creating an entirely new branch of astronomy.

The old puzzle was simply where our sun gets the energy which it lavishly radiates into space, second after second, for days, years, centuries and millennia.

The question of where the sun gets its energy came up at a surprisingly late date, less than a century ago. And almost as soon as it came up a satisfactory answer was given, at least one that was satisfactory for a few decades. The man who provided this first answer was the physicist, Hermann von Helmholtz. It is generally conceded, he said, that our sun, as well as all the other stars we can see, began as very faint accumulations of tiny dust particles and of single gas molecules which gradually condensed under their mutual gravitational attraction. It was this condensation which generated the necessary energy. The sun should still slowly contract. The very process of contraction must produce heat. Since the amount of heat released by the sun could be measured, Helmholtz could calculate how much contraction was needed to account for it. The result of the calculation was that the sun should shrink by 300 feet every year, or one mile in 17 years. The diameter of the sun is, in round figures, 864,000 miles so that it would take special observations over quite a number of years to measure such a shrinkage.

The theory had to be accepted just because there was no other and it looked nice until some people started calculating back-

A new breakthrough in the radar field, announced in August 1957, shows that this probably does not just have to be accepted. The new device, called *ordir* (from omni-range digital radar), was developed by Columbia University physicists. *Ordir* is not yet ready for production and all detail is classified information. However, it seems that the *ordir* signal is so different from natural random radio noises that it can always be told apart. Hence, if magnified, it should emerge with full clarity.

ward and forward. The backward calculation aimed to find out when the sun had started shining. The answer was 18 million years. The forward calculation was made to see for how long the sun could go on at the present rate. Well, in another 5 million years it should have shrunk to half its present diameter and should have grown so dense that not much useful contraction could be hoped for anymore. Of course it would still go on for a while but eight million years from now the sun should have become a dark star. And the earth a dead planet.

Geologists were already quite sure that the earth was older than 18 million years and Lord Kelvin decided that the sun was probably stoked by the impact of meteoric matter falling into it. Now this could be calculated too, the aim of the calculation being to find out how much meteoric matter was needed to keep the sun going. By sheer coincidence it turned out to be one earth mass a century. At that point, the observing astronomers dissented. True, they could not measure a shrinkage of 300 feet a year, but if the sun needed that much meteoric matter they should be able to see it. They didn't, hence there was something wrong. Of course it might be a mixture of contraction and meteoric impacts. Or it was something else.

This was before Einstein wrote his equation which said you should get energy by destroying matter.

"Fusion" Paper in 1929

Some twenty years after the equation was written, physicists began to reason that at such high temperatures as prevailed inside the sun the atoms should all be "stripped," i.e., they should be without their electrons. Just bare nuclei, and bare nuclei are more likely to have "atomic" reactions. In 1929 the first paper on "fusion" was published—the basis of the hydrogen bomb—which suggested that at

the proper enormous temperature hydrogen nuclei might unite and form helium nuclei. There is a tiny difference in weight: the four hydrogen nuclei are slightly heavier than a helium nucleus. A small amount of matter, therefore, "disappears," and this vanished matter *must* reappear in the form of energy. The same, incidentally, happens when a uranium atom fissions; the fragments that result weigh a little less than the uranium atom before it blew up. This also means that some matter has "disappeared," and a release of energy must be the result.

I have carefully avoided the term "destruction of matter" because it is apt to cause a wrong mental image. "Destruction," as the word implies, makes one think of the demolishing of a structure, whether it is a house that is torn down or a piece of furniture that is demolished. Here, only the structure has been destroyed, not the matter composing it; the panels and chips of the chopped up desk still weigh the same. In the "old" physics of the last century, it was an axiom that matter could not be destroyed and also that energy could not vanish. The sum total of all matter in the universe remained the same, so did the sum total of all the energy in the universe. In 20th-century physics, the axiom has been changed: the sum total of matter and of energy remains constant, but you can destroy matter (and get its equivalent in energy), and you also can condense energy and get matter.

In the sun, to return to the theme, hydrogen had to fuse into helium, thereby destroying a little matter and releasing a lot of energy. But it could not be just two heavy-hydrogen nuclei getting together to make a helium nucleus. That would release energy all right, but far more than the sun did produce.

There had to be another process. Prof. Hans Bethe in this country and Prof. Karl von Weizsäcker in Germany thought of it at about the same time, without being in touch with each other. It was a six stage process which was not too hard to understand once it is explained. It involves a number of different atoms, hydrogen (H), oxygen (O), nitrogen (N), carbon (C) and finally helium (He). Please note that the little number which precedes, as a subscript, the letter standing for the element designates the element's atomic number (or charge) while the one which follows it as a superscript designates the atomic weight.

The process begins with step



or, in words, one carbon nucleus of weight 12 and one hydrogen nucleus unite to form a nitrogen nucleus of weight 13, accompanied by a burst of gamma rays which are, of course, energy.

Since nitrogen-13 is not stable it throws one particle out of its nucleus, namely a positron (e^+) which converts one of the positive protons into a neutral neutron. This does not change its weight but makes it slide down one number in the atomic scale. Hence step



Some time later another proton, that is a stripped hydrogen nucleus, collides with this nucleus. It is a repetition of step (A) except that the nucleus is somewhat heavier to begin with. Here is step



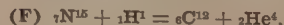
This nitrogen-14 atom waits around until another hydrogen nucleus comes along and then we get step



Like the nitrogen-13 nucleus the oxygen-15 nucleus is unstable and repeats the performance of the nitrogen-13 nucleus, it throws out a positron, changing into a nitrogen nucleus of the same weight. Like this:



Now we have a nitrogen-15 nucleus which unites with one more proton for step



This last step produces the helium nucleus which might be called "fusion ash," but it also produces a carbon-12 nucleus which was the basic ingredient of step (A). In other words it can now start all over again. And does.

The sun keeps going by producing helium from hydrogen. The reaction just explained—it has the poetic name of solar phoenix reaction—is only one of the reactions that do take place in the sun. Soon after publication of the solar phoenix reaction, C. Critchfield proposed another process which also fuses hydrogen into helium. It consists of five successive stages, involving only hydrogen and helium nuclei. Which of the two processes, the solar phoenix reaction or Critchfield's equations which are called the H-H process, has the lion's share of solar energy production is still uncertain. As a rule the H-H men claim that their process accounts for 90 per cent of the energy release, while the solar phoenix men maintain that theirs accounts for 80 per cent.

Both are agreed that the formation of helium is the poorly kept secret of the sun's energy production.

This was the answer to the old astronomical riddle.

Now for the new astronomical science: radio astronomy.

Radio Waves from the Stars

As has been related, Hertz produced radio waves for the first time in about 1896, they were the longest then known waves. One year earlier, Prof. Wilhelm Konrad Roentgen had discovered the X-rays, then the shortest known waves. In 1898 a third German, a professor of mathematics, Kurd Lasswitz, took it for granted that our sun, like all other stars, also produces radio waves and X-rays. He happened to be right but it took a long time until proof was established; first the necessary test equipment had to be produced. In 1940 there was such test equipment and G. Reber decided to look for radio waves from the sun. His equipment would have discovered a wavelength of 187 centimeters, provided the sun radiated at that wavelength. Apparently it did not, for Reber did not get any results. In 1942 he repeated his tests. He could not be sure whether he received anything or not and he himself reported "tests inconclusive."

But during the same year something happened in Europe.

The Americans, at that time, used radar sets of a type code-named GL for the detection of Luftwaffe planes. The GL radars operated on what we would now consider rather long waves, namely from 400 to 600 centimeters. All of a sudden, in February 1942, they did not operate; they received extremely strong radiation on a wavelength to which they were susceptible. The very first thing that was done was the eternal reaction of the unknowledgeable military bureaucrat, the interference was classified. It could be nothing but German "jamming" of a new type. But when S. J. Hey went over the classified reports, trying to establish where this "jamming," which had extended over several hundred miles, had originated he found that all the "jammed" sets had pointed in the direction of the sun.

This is how radio astronomy got its start. Of course the astronomers had to wait until the war was over before they set up their detecting devices (called "radio telescopes"). Unlike the astronomer who works with visible light, even if photographically, the radio astronomer is not confined to the hours of darkness, he can receive his cosmic radio waves at any time during day and night. It was found that

our sun radiates in quite a number of different wavelengths, for example at 2.5 centimeters, 63.5 centimeters, 152 centimeters and so forth. Some of these wavelengths seem to originate from the surface of the sun, some from its outer fringes, the so-called corona. That radio waves were received from the planet Venus did not surprise astronomers too much for Venus is nearer the sun than the earth, therefore quite warm and radio waves are one of the products of electrical phenomena. It was a considerably greater surprise that radio waves were received from the planet Jupiter. Jupiter had been thought too cold for electrical activity in its atmosphere since it is 483 million miles from the sun—our earth is 93 million miles from the sun. But the real field of the radio astronomer is not our own solar system, not even our own sun which happens to be a rather weak "radio star." Their field is the realm of the distant stars.

The shortest wavelength used at the present moment is 0.8 centimeters, the longest 1,700 centimeters (or about 56 feet since 30.5 centimeters equal one foot). In the future they may go to still shorter wavelengths, but they cannot go to longer ones because longer waves than 1,700 centimeters are stopped by reflecting layers in the upper atmosphere and could be detected only by equipment in a satellite orbit.

For a preliminary sorting, the "radio stars" established so far may be put into three categories. The first category is that of radio stars which are also visible in the telescope. The second category is that of radio stars which are visible as nebulous spots and the third one is that of radio stars which cannot be seen. The last type might be "proto-stars," that is stars still too attenuated to send out visible light. It must be remarked here that old Professor Helmholtz was partially right with his idea: a star does contract out of widely dispersed matter and it first shines with energy derived from this contraction. Only when its center gets hot enough does atomic fusion take over.

The Red Shift

One of the results of this new science of radio astronomy is that the so-called red shift also takes place with radio waves. The term red shift was, naturally, first used for visible light. Red light has a longer wavelength than blue light and in analyzing the light from very distant objects a decided shift to the red end was always found. This shift was the more pronounced the farther the object. Now

there are two possible explanations for this. The first is that the red shift indicates that the distant object is moving away from us. This explanation has led to the concept of the expanding universe. A competing explanation is that the light "tires" when travelling enormous distances. Whatever it is, we now know that it happens to radio waves too.

There is one other area where modern electronics technology is going to spill over into astronomy. This is a television-type device which has been given the name of image intensifier. It is not yet finished and when it is, it won't be any help as far as distant stars are concerned, but it will help with the neighboring planets. The simple fact is that the planets are not at all photogenic. The planet Saturn, for example, will make a beautiful picture to the eye when seen through a good telescope on a clear night. But the photograph taken at the same time is likely to be a mess from the photographer's point of view, just enough to tell that it is Saturn

that was photographed. The reasons why the planets photograph so poorly are summed up by astronomers with the term "poor seeing." What makes the seeing poor is our own atmosphere, which is never completely quiet. For ideal "seeing," the air should be absolutely still along the line of sight. But it isn't. Warm air moves up, colder air sinks down, there are winds. The result is a wavering image, and the wonder is that moments of perfect seeing happen at all. But they do happen, and the observer's eye gets a clear picture. The photographic plate does not, for the light coming from the planet is too weak to produce a good picture in the short time that the atmosphere is good enough to hold still. However, if this instant could be caught on a picture tube, it could be "held" and could be electronically intensified. Once this device is perfected, the photograph obtained will be one of the screen rather than of the planet directly. But it will be a good and clear picture.

CYBERNETICS, AUTOMATION AND SOLID STATE PHYSICS

DURING THE LAST FIVE YEARS or so, you could read an article about automation almost any day of the week. You could also listen to a lecture on automation almost any day of the week, including a sermon in church on Sunday. All the lectures dealt with economic aspects, management problems, union problems and, if a sermon, with spiritual aspects. Why not with the scientific breakthrough, the discovery which made automation possible? Because automation, unlike, say chromatography or synthetic polymers, was not and is not a single scientific or technological event but is a trend instead.

Two and a half centuries ago the early steam engines pumped water from mines. They had valves which had to be turned by hand when the main beam of the engine reached a certain position. The story goes that a boy named Humphrey Potter had the idea of tying a rope from the beam to the valve handle so that the beam closed the valve by its own movement at the right moment. Automation started then, in 1713. Even if this story is not true automation started in 1718 when one Henry Beighton invented a valve-turning device called the plug tree. It was just a gradual development from the steam engine which could run itself except for fuelling, which then was taught to shovel its own coal into the fire box

to a large and complicated assembly of devices which manufactured something.

This is not to say that there were no important ideas generated and applied along the way. One of them was a systematic study of mechanisms automatically controlling automatic machinery, or rather of automatic control mechanisms which made machinery automatic because of their activities. The study was begun around 1940; in 1947 it received a special name. From the Greek word *kybernetes* which means "steersman" it was called *cybernetics*. But the men who created cybernetics themselves pointed out that a fine and reliable cybernetic device had been in existence since 1782, the centrifugal governor of a steam engine, invented by James Watt. Steam engines are so rare by now that it might be necessary to describe this "governor." It consists of two steel balls, suspended from steel links and whirling horizontally, driven by the steam engine. If the engine speeds up, the whirling balls whirl higher, thereby throttling the steam valve so that the machine slows down again.

In a modern device of this general classification it may be the temperature of something which is measured. There may not even be direct action if the temperature rises, the figure may go through a

computer first which then says how much action should be taken. But the principle is not changed radically in any way. The modern device is more accurate by far and can exercise a built-in "judgment."

Solid State Physics

Another new term that has cropped up in recent years is "solid state physics," originally instituted as a study of what goes on in solid substances. Again there is a fine old example around: you magnetize a steel bar. Nothing has happened externally, the steel bar still has the same dimensions, it weighs the same, its chemistry is undisturbed. Still, something must have changed, because it now has a property which it did not possess before.

One modern device which has sprung in a fairly straight line from such studies is the transistor (the name is a condensation of transformer plus resistor), a tiny little thing which does the same job as a vacuum tube. But if the vacuum tube is the size of a small egg, the transistor is the size of a pea. It consumes very little power, it does not warm up and apparently nothing can go wrong with it unless it is destroyed mechanically or heated to red heat. It consists of two solid substances, the metal germanium and the non-metallic element silicon.

Both these substances are by no means recent discoveries, so why was the transistor delayed for so long? Because of the fantastic purity of the materials needed. They must first be refined to the point that they contain less than one "foreign" atom to each 10,000 million atoms. Then specific impurities must be added, at the rate of one atom to each 100 million atoms. Then you get the materials which make the transistor possible and the transistor, in turn, makes it possible to

condense a roomful of electronic equipment to the size of a suitcase.

How does one get such high purities? The system resembles chromatography to some extent. Suppose you have an impurity which will dissolve in liquid germanium but has little tendency to go into the germanium metal which solidifies from the melt. You take a rod of metal and very carefully melt its tip only. Then you move the heat downward a bit so that the metal at the tip re-solidifies. It will now be free of the impurity, the impurities still are in the molten zone. By slowly moving the molten zone down the rod you take all the impurities along and they'll in the end be concentrated in the lower end of the rod which is cut off and discarded. This is called "zone refinement"; it may have to be repeated a few times with the same sample to free it of all impurities.

Another advance from these studies which may become very important is the silicon solar battery. It consists of thin wafers, hardly thicker than a razor blade, of originally pure silicon with a minute addition of arsenic. This is the body of the wafer. The outside layers of the wafer consist of originally pure silicon with a minute addition of boron. One wire is attached to the outside of the wafer, another one to the material inside. When sunlight strikes this wafer single electrons are knocked loose from the atoms and, finding the nicely conducting wires, come out in a steady stream. But a steady stream of electrons is an electric current, so this device produces electric current directly from the energy of the sun's rays.

These are the beginnings—the transistor which has already proved its usefulness and the silicon battery which opens new vistas. To tell what else will result from these studies would need a prophet.

CHEMISTRY

Plastics, Rubber and Fibers

THE CHEMICAL REVOLUTION which put so many new substances on the market and into the household is almost exclusively the result of the last forty years. The key word is a chemical term "polymer," based on two Greek words, which mean "many parts." But, of course, the mere translation of a scientific term never reveals its full and complete meaning; we'll have to follow, in outline, the way the chemists themselves caught on.

Originally chemists made a very strict distinction between "inorganic compounds" and "organic compounds." Although we now know that this distinction is meaningless it is still in use for reasons of convenience. Originally it was taken most seriously indeed.

A substance like rust, produced by the oxidation of iron, was classified as "inorganic"—it happened in the open. Ordinary table salt was another such in-

organic substance. So was ochre and saltpeter and so forth. Opposing them there was a long list of substances that did not "happen" but were produced by a living organism, either plant or animal. Hence they were "organic" compounds which could not just "happen." Sugar was such a substance. Many plants made it but it could not be found in nature otherwise and no chemist could put it together in the laboratory. Some natural dyes also were "organic," a prime example being indigo; the plant that produced it was an important crop. But then a chemist, Friedrich Wöhler, made a substance that previously could "only" be produced by animals, namely urea; this laboratory development proved that what distinguished "inorganic" from "organic" substances was mainly complexity.

All chemists were understandably excited and went to work, making things (synthesizing them, to use the technical term) which normally needed plants to make. The first major success was the dye called indigo. In the process of casting around and seeing what could be done, a most important discovery was made. There were things which came to be called catalysts. A chemical reaction which would not take place with only the necessary ingredients present might take place if there was also a catalyst present. (Or, in many cases, a catalyst would enormously speed up what, without it, would be a very slow reaction.) The catalysts themselves did not change and they were humorously compared to the famous shotgun at a certain type of legendary wedding. The gun did not do anything really and remained unchanged, but because of its presence something took place which would not have taken place, or only much later.

A Sticky "Nuisance"

But while working with organic compounds, with or without catalysts, chemists fairly frequently saw things turn out wrong. The reaction was expected to lead to, say, nice clean yellow crystals. Sometimes it did but sometimes, instead of crystals, you obtained a sticky mess which wouldn't dissolve in anything on hand and could be cleaned up only by hard scrubbing, sometimes not even by scrubbing. The chemist then used to shrug his shoulders and because the stuff often felt like fresh sticky resin say that the "compound resinified." Then he threw it away and started over again, hoping that things would not again "resinify."

What took place unbeknownst to the man to whom it happened, was polymerization and in order to explain just what this is we best look at natural rubber.

The rubber tree—*Hevea brasiliensis*, to give it its botanical name—yields a sap which is called latex. It looks somewhat like milk, and about 62 per cent of fresh latex is just water. The bulk of what is not water was analyzed early and found to have the chemical formula C_5H_8 , just five carbon atoms and eight hydrogen carbons sticking together. The formula was no doubt correct but obviously it told only a small part of the story. The dilemma was this: analyzing rubber yielded the simple formula mentioned. But C_5H_8 , when you had it, was most decidedly not rubber. Then what was wrong?

It was guessed early, and proved later, that Mother Nature had used a special trick. A beaker of C_5H_8 was comparable to a box full of paper clips. But rubber consisted of the same paper clips hooked together in long chains. The rubber "molecule" then was a kind of super-molecule, made up of long chains of 500 to 800 units of the simple C_5H_8 molecule. The first thing to be done was to coin a few terms so that there would be no confusion as to which type of molecule one was talking about, the single "paper clip" or the chain. The chains were called "polymers." The single unit was called a "monomer" (Greek *monas* means both "single" or "a unit") or, sometimes, an "isomer" for Greek *isos* means "equal" or "alike." Causing the monomers to hook themselves into polymers was logically called polymerization.

When, in the past, reactions had gone wrong by "resinifying" they probably had just polymerized, without the knowledge, and, in fact, against the will of the experimenter. On the other hand, natural long polymers had been utilized nicely without anybody knowing just what he was doing. In making rayon, for example, the manufacturers had used the long polymers of cellulose (from wood) to make fibers. Though there had been some earlier attempts, systematic investigation of the long polymers was not attacked until the late twenties and has been going on ever since. The way things progressed is almost typical of many developments. Nature made long polymers, let's duplicate them. This, in many cases, did not work out too well. But in the attempt other polymers that do not exist in Nature, were made and entirely new substances that had never formed in any plant, came into being. And those which proved useful were put on the market.

The Two Plastics Groups

Before we look at a specific example it may be useful to mention that all plastics,

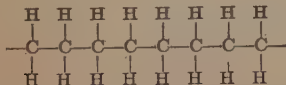
no matter what their chemical composition and no matter whether they are lumps, blocks, powders or fibers, can be sorted into two large groups which, unfortunately, have similar names. In both cases the Greek word *thermos* ("heat") is involved. One group bears the name of thermoplastics, the name indicating that they became plastic (soft) when heated. These thermoplastics behave like the old-fashioned sealing wax. Hard at room temperature it can be softened by heating. When it cools off, it becomes hard again. And you can re-heat and soften it as often as you desire.

The other group is that of the thermo-setting plastics. The name means that the substance "sets" (hardens) when heated. The ingredients are mixed and become plastic through heating. Soon after they set and stay set, just as cake-dough which also cannot be made soft again by re-heating. If something made of thermo-setting plastics turns out to have the wrong shape or wrong dimensions it is simply unfortunate and a total loss. All this also applies to a sub-group of plastics, the epoxy resins which set at room temperature when the proper substance (a liquid) and the catalyst (also a liquid) are mixed.

So much for the names and terminology. Now let's look at a few examples. There is a substance called ethylene, the formula is C_2H_4 and the molecule looks like this



The vertical lines between the letters express what is called chemical "bonds." Each of the two carbon (C) atoms holds on to two hydrogen (H) atoms with one bond, but the two carbon atoms hold each other with a double bond (horizontal lines). When ethylene is polymerized one of the two carbon bonds with which the carbon atoms held each other is used to hold on to the next monomer so that you get a chain like this:

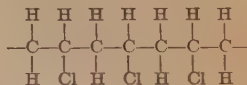


This is polyethylene, used for films and known in the household in the forms of electrical insulation, garden hoses and plastic bottles. A substance rather similar to ethylene is vinyl chloride; it differs from ethylene in that one of the hydrogen atoms has been thrown out and a chlorine (Cl)

atom substituted. So the monomer looks like this



and polymerizes into polyvinyl chloride

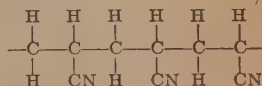


which shows up at home in the form of LP records.

If you remove the chlorine atom and substitute a carbon and nitrogen compound (CN) you get this monomer:



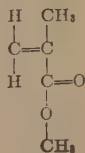
and the polymer



Chemists call the monomer acrylonitrile and the polymer polyacrylonitrile but the customer calls it orlon.

Remember the example of the chain of paper clips. If you made such a chain you could have it branch off by hooking two clips to one; or else you can hook an extra clip in at intervals and get an intriguing pattern. If you use molecules instead of paper clips you might get intriguing properties.

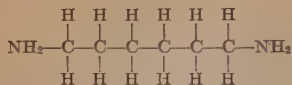
The molecule I have in mind is called methyl methacrylate. It isn't much more complicated than the others and is represented like this:



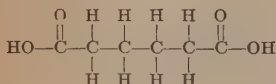
Here you have such a dangling paper clip. Put together in a chain you have polymethyl methacrylate which looks like glass, is called lucite or plexiglas (depending on the manufacturer) and appears as display cases, hat holders, pocket combs and "glass" heels on evening slippers.

As a final example: there are paper clips which look silvery and others which look coppery. Why not make a chain which hooks them up alternately, one silver, one

copper, one silver, etc., etc. In stricter terms: form a polymer of two different substances. There is one which has the admittedly difficult name of hexamethylenediamine



The other substance is called adipic acid and represented as



When they are hooked up in long chains, the two monomers alternating, you have nylon.

Most of the modern plastics, then, consist of very large molecules which are formed because smaller molecules are hooked together. The whole field is based

on an understanding of what really took place when a compound has unexpectedly "resinified." Naturally the field is still growing, for our modern plastics, while good, are not yet perfect. The two main wishes of chemists and engineers reflect the two main drawbacks. There is no plastic with a really hard surface; they all get scratched up in use sooner or later. No can they stand heat very well.

The first of these two wishes can probably be granted by the plastics experts: it should be possible, though probably difficult, to produce hard-surfaced plastics. The wish for high heat resistance is a different story; one probably cannot expect a plastic to hold together far beyond the temperature at which it "sets." But here another group of new substances has come in. They are called "cermets" (from *ceramics* and *metals*), which term indicates their composition. They are still new, but within another decade there probably will be as many cermets—at least in industry—as there are now plastics in the household.

Tall Columns and Filter Paper

How do you separate a mixture of iron filings and lead filings? Simple, you use a magnet. What the magnet takes away is iron, and what is left behind is lead. How about a mixture of lead filings and sand? You just heat it, before the mixture even gets to be red hot the lead will have melted and can be poured off while the sand remains behind. Now a mixture of brass filings and sawdust? You dump it in a pail of water, the sawdust will float and the brass will sink. But how about a mixture of brass filings and gold dust? In such a case you would resort to an acid which dissolves the copper and the zinc that form brass but which leaves the gold untouched.

These are all simple examples of separation methods which take advantage of one characteristic or another. In one case, the fact that iron is magnetic is used; in another, advantage is taken of the low melting point of lead, or else the fact that one weighs more than the other is utilized. If you had a mixture of iron filings, sand and sawdust you may have to use a two-step process, first floating off the sawdust and then separating the remainder with the help of a magnet. If nickel filings were mixed in, too, the thing would be more complicated by far, for both iron and nickel are fairly alike in weight and both are attracted by a magnet.

The greater the number of substances, the more difficult the job of separating them and even more difficult if some of the substances in the mixture have similar properties. The most difficult job of that kind which has confronted chemists so far was that of the separation of the so-called rare earth metals which chemists, in moments of despair, have dubbed the "gregarious metals." There are sixteen of them and they have names like lanthanum, cerium, praseodymium, gadolinium, yttrium, ytterbium, thulium and so forth. The layman is likely to swear that he never came across one and never heard any of these names. The latter may be true but the first assertion is not, provided he uses a cigarette lighter. If he does, he carries several of the rare earth metals around with him. The "flint" in his lighter is mostly cerium, with some of the others present as impurities in the cerium. In the case of the lighter "flint" purity of the metal is highly unimportant.

But for other uses, purity is very important. How can you even investigate the properties of a metal if all you ever have is a hopeless mixture of eight or nine metals in unknown proportions? The term "gregarious metals" is only too true; they always occur together and their properties are much alike. Their discoverers had to resort to the most complicated methods of

chemical trickery to separate them. It was always difficult, incredibly tedious and never quite satisfactory.

The "Green Soup"

The solution to the problem came from an entirely unexpected corner. In about 1907, a Russian botanist puzzled over a greenish soup consisting of ground-up plant tissue. His name is transliterated from the Cyrillic alphabet either as Tsvyet or as Zvyet; at any event it was an apt name for a Russian botanist for it is the Russian word for "blossom." Tsvyet seems to have reasoned as follows: if I put this ground-up plant tissue into a tall glass pipe, the various ingredients will sort themselves out according to their specific gravity. The heaviest substances will end up at the bottom, the lightest ones on top. But I am not so much interested in their weight, I am interested in their chemistry. Now if I fill this tall glass pipe with a chemical and let the liquid to be investigated dribble through I should get a chemical separation. Some of the ingredients of the green soup will combine very readily with the (pulverized) chemical in the tube. They'll then be at the upper end; then I should get a layer of ingredients which also combine with this chemical but not as readily. And at the very bottom there will be those that do not combine at all.

Since many chemicals have a color of some kind and the experiment resulted in layers of different colors the method was dubbed *chromatography*, from the Greek word *chroma* for "color" and *grapheo* which means "I write." Incidentally, Tsvyet's name was still apt, for the Russian word "tsvyet" is also the colloquial word for "color." The reason why nothing was heard of this for a long time is that Tsvyet's investigation aimed at something which chemists still can't do (to find out about photosynthesis, which will be explained later). He simply bit off far more than he, or anybody else in his day, could chew.

In 1932, the German biochemist, Willstätter, revived chromatography as a means of chemical investigation and it proved to be a very useful method. A dozen years later chromatography took its next big step, this time in England. It was found that high grade blotting paper will always have a very, very thin film of moisture. You can get rid of this very fine film by drastic means, but its presence rarely does harm and is sometimes very useful. Because of this film of moisture a piece of blotting paper could replace the older glass tube. One could soak the paper

with a chemical and then let the liquid to be investigated creep up in it. The result would be the same, those substances which combined most readily with the chemical would combine first and "get stuck," the ones which combined more slowly would creep up farther and those which did not combine would creep all the way unhindered. The big advantage was that you then had all this literally "on paper" which could easily be cut up for detailed investigation of the various areas.

Paper Chromatography

This method was called "paper chromatography" and the older method was renamed column chromatography. Paper chromatography is one of the most important chemical research methods now; one chemist said that if paper chromatography were banned, whole branches of chemistry would come to a grinding stop.

Before paper chromatography had been thought up, column chromatography was used extensively in atomic energy work, where it was also necessary to separate chemical compounds. And the people involved in it knew that what usually takes place in these columns is that a hydrogen nucleus changes place, hence they spoke of an "ion exchange." Since they knew what they wanted, they discarded the simple chemicals like aluminum oxide and calcium carbonate that had been used in early researches and made themselves synthetic polymers just for this purpose. They were complicated from the layman's point of view and bore equally complicated names (one much used is labelled: sulfonated styrene-divinyl-benzene copolymer) but they could be made in quantities and they did the job. For laboratory work, paper chromatography is usually more convenient, but column chromatography also has a strong point: you can get fairly large amounts of the substance you are chasing.

Since columns filled with such synthetic resins could separate closely related substances and could also produce amounts like half a pint of this and a quart of that, why not make the columns much taller and bigger and use them for production?

Monazite Sand

The production items were the "greivous metals." Drs. Spedding and Powell of the Ames Institute for Atomic Research (now the Ames Laboratory of the Atomic Energy Commission) had shown that ion exchange would separate compounds of the various rare earth metals. The industrial process developed during the years since the war works as follows: The

raw material is something called monazite sand. This contains the rare earth metals, or rather compounds of the metals in what used to be an inextricable mixture. First the whole is dissolved in nitric acid to make it more tractable. Then it is treated with oxalic acid. This removes impurities that are not rare earth metal compounds. After the treatment the rare earth metals are left in a form which the chemist calls oxalates. The oxalates are then changed into oxides, which can be (and are) dissolved in hydrochloric acid.

If a chemist had done all this prior to the making of synthetic ion exchange resins he would still not have accomplished anything; it is still a mixture of all the rare earth elements, only they now are in different chemical compounds. But now the solution goes into the column with

the co-polymer mentioned a few paragraphs back. The different rare earth metals "stick" to the resin, chemically speaking. The point is that some are held more strongly than others. Now comes the separation. It is done by adding another chemical (an ammonium salt of ethylenediamine tetracetic acid) and this replaces the rare earth compounds held by the resin. First the one least strongly held is let go, and it accumulates at the bottom of the column which may be several stories tall. Then follows the one that is a little less strongly held and so on, until the one most strongly held collects at the bottom and is syphoned off.

By this means, we cannot only separate the gregarious metals but we can do so in commercial quantities and with high purity.

The Secret of the Green Leaf

There is one chemical reaction which may be called the most important chemical reaction on earth. Without it there would be no life. But this reaction is still a secret of Nature. We do know what happens but we are still trying to find out how it happens and how to duplicate it if we can.

This reaction is called *photosynthesis*. "Synthesis" means the building up of a chemical compound, the "photo" part of the word is from the Greek word for "light." Hence it means a synthesis caused, or aided, by light. Green plants practice photosynthesis every day. They take water, simple H_2O , from the ground, along with it a few dissolved minerals; they take carbon dioxide, simple CO_2 , from the air and they use the energy supplied by sunlight to convert the simple raw materials into sugars and starches and cellulose and even vitamins, usually having free oxygen left over which they return to the atmosphere for the animals to breathe.

Since there would be no life without photosynthesis—and since photosynthesis presumably could be used to make synthetic food—scientists have been most interested in this process for a long time. Indeed the invention of column chromatography, as has been mentioned, was a

by-product of the search for the secret of photosynthesis. So far the secret is still a secret, but a few things have been learned.

Apparently plants use two different methods of photosynthesis. One, which has been guessed at for quite some time and is for this reason referred to as the standard method, has sugar as its first important intermediate product. While the plants obviously store some of this sugar as sugar, most of it is used up for further conversions, into proteins, fats and vitamins. Another more recently discovered method used by plants is to make a substance called aspartic acid. A number of steps farther up the ladder would be sugar, but at least some plants go on directly from the lower step to amino acids and protein.

So far scientists have not yet succeeded in tracing all the steps and even after they have all been traced this does not constitute an absolute guarantee that they could be duplicated. But it appears likely. If we succeed in using photosynthesis first in the laboratory and then in the factory we'll have made a breakthrough almost as important as the release of atomic energy.

MEDICINE

MEDICINE EMERGED FROM the first World War with a most impressive array of surgical techniques and a large store of knowledge about diseases. Many types of

sickness, it was known, were caused by bacteria and in the course of time a number of ways of fighting such bacteria were found. In some cases one could use im-

munizing injections, in some cases curing injections, both based on the fact that the body of an animal, sick with the same disease, produced something, it was not quite known what, which killed off these bacteria. In a few sicknesses, chemistry had been called upon to help and succeeded in producing highly specialized chemicals, which killed the bacteria without harming the body cells of the patient.

While there was a great deal of knowledge, it was clearly realized that there were a few areas where knowledge was completely lacking. Diabetes was a case in point, an often fatal disease which was decidedly not contagious, hence not caused by an infection in all probability. Something seemed to go wrong in the patient's body and it was suspected that whatever went wrong did so in the pancreas gland. Then there were a number of sicknesses which also were not contagious and which resembled slow poisoning; often the patients recovered after a mere change of diet. And then there existed a large number of diseases which very obviously were caused by infections, with the major mystery attached that it was impossible to find the organism which caused the infection.

To understand the difficulty in which the researchers found themselves, we have to go back to the last decades of the 19th century when there was still a lot of debate as to whether bacteria did cause diseases. Dr. Robert Koch laid down three rules which he wanted to see fulfilled if somebody expected him to endorse a claim that researcher So-and-so had found the cause of Disease X. The first rule was proof that the bacillus had been found in the body of the patient. The second rule was a demonstration that So-and-so had succeeded in isolating the X bacillus and in growing it as a so-called "pure culture" outside the living body. The third was that bacteria from such a culture should infect an animal with the X disease.

These were good and useful rules, but the dreaded hoof and mouth disease of domestic cattle provided the first stumbling block. It was very contagious but its cause could not be found. To strain bacteria from solutions, filters of unglazed porcelain were in use. The porous porcelain permitted a liquid to pass through its tiny holes. The unit of measurement used in such work is the *micron* which is the thousandth part of a millimeter. (There are 25.4 millimeters to the inch.) The holes in the porcelain filters were smaller than that, measuring from 0.2 to 0.8 of a micron; most bacteria are larger than a micron. Since the suspected cause of the cattle disease passed such a filter it was obviously an extremely small bacillus.

But then it turned out that Dr. Koch's second rule could not be fulfilled either; the "filter-passing organism" apparently died off outside the living body very fast. After a while the name "*virus*" was suggested for such filter-passing organisms, but most researchers, even though they adopted the term as a matter of convenience, continued to think that a virus was simply a very small bacillus. They might be small but they were certainly important; by 1925 it was known that at least forty different diseases were virus infections, among them everything labelled cold, flu or grippé, also typhoid fever, Rocky Mountain fever, measles and so on. Such virus organisms not only attacked people but also animals and plants. A well-known plant disease of that type was the "mosaic disease" of the tobacco plant.

The next step had to wait until 1935 when Dr. Wendell M. Stanley could show that the tobacco mosaic virus could be crystallized. This was an unheard-of development for crystals are "dead," while a virus in action had to be considered as "alive." The virus then turned out to be something that could be either, something not near but on the borderline of life and non-living matter.

How a Virus Looks

In the years since Dr. Stanley's discovery a great deal of additional work has been done on the tobacco mosaic virus, especially by the Virus Laboratory of the University of California. A new research tool, itself a development of the last four decades, helped in this work: the electron microscope which can produce magnifications that would have been considered impossible and fantastic half a century ago. With the aid of this instrument it could be established that the tobacco mosaic virus normally has the shape of a rod, 0.3 microns long, and 0.015 microns thick. It is a thickwalled cylinder of protein with a rodlike core of nucleic acid (the term nucleic acid refers to the nuclei of cells, not the nuclei of atoms) which accounts for about 6 per cent of the total weight of the virus.

Now it was possible to break down the virus by chemical treatment; what was finally left appears to have about the shape of a washer cut into four parts. This might be a single molecule. If the chemical treatment has been gentle enough these supposed molecules will rebuild a virus, they join together and, in the arrangement of a spiral staircase make 130 turns which brings the length to 0.3 microns. And fresh ribonucleic acid would re-form a core and this re-built

virus proved to be alive by infecting tobacco leaves.

All this is in the realm of research. But

that much has been learned about fighting virus diseases was dramatically illustrated by Dr. Salk's polio vaccine.

The Isles of Langerhans

The story of diabetes can be told in fewer words, mostly because it is much better known to the public. Late in the last century it was proved that removal of the pancreas immediately produced severe diabetes. Obviously this gland produced something that kept chemical order in the body; if it was absent, disorder set in. It was subsequently found that other glands in the body also produced substances which regulated this or that (for example growth) and these substances received the general name of *hormones*, which means about the same as the word "exciters." To return to the pancreas specifically it is a rather large gland and

imbedded in it are areas which physiologists called the Isles of Langerhans.

There was reason to suspect that it was these isles which produced the regulating substance, the hormone. But it was not proved until 1921 and since the substance, finally found, came from these isles (in Latin *insulae*) its name became insulin. It happens to dissolve in alcohol so that alcohol could be used to extract it from the glands of slaughtered animals and also of large fishes. By 1922 insulin became available to supply bodies of living men who for still unknown reasons fail to manufacture it themselves. Other hormones have followed since.

Vitamins and Wonder Drugs

The story of the vitamins resembles that of insulin in that it began with a clearly felt lack of knowledge. There were these slowly progressive sicknesses like beri-beri, pellagra and the dread of the sailor, scurvy, and the picture was always the same: a kind of slow decay for which no reason could be found. But if such a sick person were removed from his environment he often recovered, again for no discernible reason. It had something to do with what people ate, but what and how? Every once in a while a European doctor working in what were then colonial areas of the Far East drew the conclusion that the native diet might contain a slow and probably mild poison. It did not hurt somebody who ingested it only once or a few times, it probably had to accumulate over a long period. And that, the reasoning could be carried on, was why it was so hard to find.

We now know, of course, that the reasoning went in the wrong direction. The sickness was not caused by what the vitamins ate, it was caused by what they did not eat.

These mysterious sicknesses were what are now called "deficiency diseases," and the deficiency was usually a vitamin deficiency, though vitamins had not yet been discovered.

The story of their discovery is complicated, mostly because researchers in various countries attacked the same problem at about the same time. Moreover, they did not know very clearly just what problem they were attacking, and they do not seem to have read each other's publica-

tions all the time. That the first World War intervened in the early stages of the work did not help matters either. Nobody could have told, at any moment up to the end of the first World War, just where science stood in these matters. Now we know that laboratory rats provided the first clue. Dr. F. G. Hopkins in England and Dr. Stepp in Germany both kept laboratory rats on a really "pure" diet—purified fats, purified proteins and carbohydrates. It was as scientific as possible, but the rats died. However, if they were given milk to drink instead of distilled water, they carried on. This was done during the years 1906 to 1912, and the idea that something must be missing took hold. In 1912, Holst in Norway found that scurvy could be cured by the juice of green cabbage leaves or the juices of citrus fruits (which do not grow in Norway). Holst reasoned that these plant juices contained an unknown substance (now called vitamin C or ascorbic acid) which produced the cure. In retrospect it seems as if this unknown substance was thought of as "medication" rather than as something which remedied a deficiency.

The story then jumped to America, where Dr. Elmer V. McCollum also kept laboratory rats on a strictly supervised diet, just as Drs. Hopkins and Stepp had done. Dr. McCollum's rats were not nourished adequately; they were purposely slightly underfed as far as carbohydrates, fats, etc., went. But Dr. McCollum had extracted something—he didn't know what—from butter and egg yolks by using ether as a solvent. His undernourished rats even grew if he added this "accessory sub-

stance," as he called it provisionally. The next discovery was that two different "accessory substances" were needed. One of them was soluble in fat and was labeled "substance A"; the other dissolved in water and was labeled "substance B." Several years later, a Polish researcher, Casimir Funk, suggested the name vitamin for these "accessory substances," based on the Latin word *vita* for "life," as substances essential to life.

The next surprising discovery was that one did not have to rely on plants. Up to 1923 it had been thought that here was simply another example of the chemical versatility of the plants. Plants not only made sugar and starch and fat, they also could produce colors and odors and vitamins. Animals simply could not do this. However, animals, and men, did. Vitamin D they can make themselves, with the aid of ultra-violet light from the sun. Ultra-violet light had already been used directly to cure rickets but while the cure had worked nobody had any idea that a vitamin formation had been involved. This was established in 1924.

One might say that by that year the vitamins had been "discovered." Much of the remaining work was refinement, as for example discovering that the vitamin called B was actually a complex of a large number of substances. Only one more thing remained to be done. In a reference work printed in 1941 it is still stated that "vitamins are substances of unknown composition." Only a few years later the composition became known. Synthesis followed hard on the heels of successful analysis.

When the term "modern drugs" is used the layman usually remembers recent drug history in about the following terms: "first there came the sulfa drugs but then penicillin and other antibiotics were discovered." Actually penicillin was discovered by Sir Alexander Fleming in 1929, while the discovery that drugs, of a type called sulfanilamide by chemists, destroy bacteria was made in 1932 by Gerhard Domagk. And, of course, both were not brand new. European peasants, for centuries, tied moldy bread to wounds, claiming that this prevented inflammation and pus formation. And compounds like the sulfa drugs had been known, as chemicals, to chemists. There are, as may be remarked in passing, quite often long time intervals between a discovery and its application; about three decades went by between the first making of DDT and its first use.

The Sulfa Drugs

The reason why the sulfa drugs appeared on the scene first was a simple

one: once chemists knew that there was a market for such compounds they could produce them in quantity with little delay. But penicillin, and the other antibiotics which followed them, terramycin, aureomycin and so on, had to be grown. That means evolving a technique for growing the molds; mistakes can be made in evolving the technique and, in general, it takes time.

Chemists specializing in drugs, even those who have personally benefited by injections of antibiotics, tend to feel that the future will belong to the drugs rather than to the antibiotics. As time goes on physicians are bound to encounter more and more strains of bacteria which are not killed by, say, penicillin (or by sulfa drugs for that matter). It isn't that they "got used to it." What happens is that among the millions and millions of bacteria there are a very few that happen not to succumb. All the others die off, these few survive and multiply and produce a new immune strain. Hence new drugs will be needed all the time although it is quite possible that a strain of bacteria which is not harmed by the latest innovations, might be felled within hours by a drug long out of use. Whether the molds will produce new antibiotics is a question, although one can work in that direction too. But the chemists think that they'll be able to produce new bacteria-killing compounds faster than the biologists can grow new antibiotics. Moreover, a carefully tailored drug molecule will not produce unwanted side effects.

The very latest in drugs is an answer to a very recent danger, namely the anti-radiation drugs. Everybody knows of the victims of atomic radiation, but usually stops reasoning at that point. But between acquiring the radiation and succumbing to it there is a chemical interlude. The radiation causes chemical changes in the body and these changes ultimately cause death. If one could stop these changes from taking place everything should be at least reasonably well. One such anti-radiation drug has already been announced under the code name of AET. Researchers found that much of the damage in the body is caused by a kind of "fragments of molecules" which chemists know under the name of "free radicals." AET binds these free radicals and makes them over into harmless substances. The drawback with this particular drug is that it must be taken before the radiation damage occurs, the drug must be present in the body when the free radicals form. However, this is only the first drug of this kind and research work is going on on more. Even on a peaceful earth anti-radiation drugs will be needed.

HOW NOT TO LOSE MONEY

By

SAM SHULSKY

Assistant Financial Editor of
The New York Journal-American
and author of the column
Investors Guide

INVESTING MEANS, simply, putting your money out to work. Investing in common stocks means buying a share of a corporate business. It means, actually, going into business. And business implies risk.

In the first chapter we shall talk about large and small investors, young and old investors—and those who should not be investors. There is nothing in our Constitution which declares we must all invest in business. There is no basis for the oft-repeated, but loosely thought out argument that, “we must all help build American enterprise.” We do that with our work. Many of us have neither the capital nor the temperament to do it also with our savings.

Risk should be undertaken only by those who can assume it, and even then only after they have set up certain safeguards first. These safeguards—for the average person—are insurance and emergency savings. To sally forth in search of investment profits before erecting these defenses would be foolhardy.

SAM SHULSKY

I would like to go beyond Mr. Shulsky's sound advice and make clear that we are not suggesting to our readers to invest in stocks if they have not already made the decision to do so. This section is intended only to help and guide people who are already investors or have decided to become investors, before reading this section.

We selected Mr. Shulsky to prepare a guide for investors because of his excellent reputation as a financial columnist and because of his ability to make the subject interesting, simple and clear, using the effective technique of questions and answers.

DAN GOLENPAUL, *Editor*

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Who Should Buy Stocks?

Q. I am 24, married, one child. Earn \$120 a week in an auto plant, have \$200 in savings bonds, bank account of \$250 and \$1,500 life insurance. What stocks should I buy?

A. I don't think you have any stock-buying money, as yet. First you ought to sign up for more life insurance while you are still young and can get it at low rates. Ten times the amount you now have would not be too much for a young family man. Secondly your savings account should equal 3 to 4 months wages, especially since you are in a seasonal industry.

If owning your own home is important to you, that, too, should take precedence over investing in stock.

Q. I am a secretary, 24, earning \$75 a week. Live at home and therefore could save about \$10 a week for investment in stocks if I could establish a regular investing habit. Have \$1,500 in the bank and \$500 in E bonds, no dependents.

A. Two programs suggest themselves as best suited to your needs: a monthly investment program or a mutual fund. See the articles on those plans.

Q. I have two children, 14 and 15. How do I start investing for their college education?

A. You will be needing this money in 2 to 3 years. If the stock market, having risen almost steadily for 9 years, should turn around and go into a decline you may not be able to sell out anywhere near your purchase price.

Dollars which will be needed within a few years should not be put into stocks. It would be much better to put them into a savings bank or a Federally insured savings and loan where you can earn 3 to 4 per cent interest.

Q. I have inherited \$5,000. I have never bought stocks, but own my home, have savings account, \$3,000 in E bonds and ample life insurance. I would like to buy some stock with this extra money. What would you advise? I am 47, married, two children, covered by Social Security.

A. There is no reason why this money could not go into shares. Split it up between good quality shares which pay about 5 per cent and growth stocks which may pay very little but enjoy considerable appreciation potential. Just because you received the money at one time is no reason for investing it all in one day. Space your buying to take advantage of any market fluctuation.

Q. I am a widow, 77, and have just

collected \$25,000 in life insurance. What stocks should I buy? My other assets are a home, free and clear, and \$1,500 in a savings bank. I have no dependents.

A. There are several courses open to you.

1. You could go into common shares, stressing high safety and yielding you anywhere from 4½ to 5 per cent.

2. You could invest in any of several high grade railroad and utility bonds which today yield about as much as stocks.

3. You could buy a single payment annuity which would begin immediately to pay you a fixed sum, for life.

There are certain advantages to all three. The common shares could be expected to increase their dividends should we experience further inflation. In that way you could hope to maintain your living standards even should prices rise. The bonds are, of course, safer investments as far as principal is concerned. And the annuity is a top safety, guaranteed payment for life. You will never be left without some income.

Before you make any choice you should discuss with some of the large life insurance companies just how much per month for life \$25,000 will buy for you. If it works out to better than \$110 a month that would mean more than 5 per cent on your money, which is as much as you can expect from securities with the safety you require.

Perhaps a cautious arrangement would be to split the money between an annuity and common shares. In that way, the stock income can be expected to help you meet inflated prices. If we run into a period of deflation, when dividends from stock may decline, your steady income from the annuity will represent increased purchasing power.

Q. We are a retired couple, 69 and 67. Receive maximum Social Security plus a small private pension. Have \$850 in the bank. Would like to invest it for additional income. What would you advise?

A. If you put that money into a stock with the high safety of A.T.&T.—and you should take no chances—your income would be about \$45 a year. In the bank it should be earning you nearly \$30 a year. The \$15 difference, about 30 cents a week, is hardly worth the disadvantage of doing without ready cash plus the additional fact that in stocks—even in securities of A.T.&T. quality—your \$850 may be worth \$900 one month, but only \$750 the next. The bank is the best place for the money.

How Do I Go About Investing?

(See "What's an Investment Club," page 131.)

All securities are bought through a broker. He may be a stock exchange member who will charge you commissions. He may be an "over-the-counter" broker who sells the stock to you directly from his own shelves in exactly the same way the grocer sells you a pound of coffee, in which case he makes a profit by marking up the price above what it costs him. The way you go about selecting a broker is very important.

The way to pick one is to visit several—large or small. Explain your program to them and listen to the way each one would handle it. Some may tell you quite frankly they are not equipped to handle your business. That's not snobbery, just good business. You wouldn't expect to buy 10 cents worth of nails at the main warehouse of U. S. Steel.

In addition, you must keep your ears open for attitudes. If you are a cautious Joe and want to put your money to work for a 5 per cent return, taking as few chances as possible, don't sign up with a broker whose account executive continually harps on the money he's made for his customers in penny Canadian mining stocks. You won't be happy there.

Conversely, if you are a young fellow with no dependents, a steady, but sober job and a comfortable bank account to fall back on and want to embark on a program of capital appreciation, don't sign up with a broker who devotes most of his time to handling the government bond accounts of elderly widows.

Q. I am 28, and would like to invest \$100 every six months. How do I go about it? Do all brokers charge the same commissions? Since I will have only \$200 a year, should I set up an account with a small firm?

A. The amount of money you have to invest has no bearing on the size of the brokerage firm. In fact, larger firms generally are more eager to get small accounts than the smaller firms since the large brokerage houses are often equipped with all forms of automatic bookkeeping devices which make small accounts profitable.

Q. In the last three days I've received two telegrams and a phone call from some broker in Toronto who—

A. Hang up, quickly! Legitimate brokers do not solicit customers by telephone or telegraph. They advertise and offer analyses and studies to those who mail in coupons, but they do not use "sucker

lists" in the way peddlers of cheap stock do. Anyone who spends \$5 to \$10 soliciting a strange customer for the purpose of selling him as little as 100 shares of 25 cent stock is obviously not selling legitimate securities.

Q. I would like to start buying stocks, but haven't much more than \$20 a month to invest. Some of the men in the office want to start an investment club. Is that a good idea?

A. Investment clubs have enjoyed phenomenal growth in recent years.

Q. We are newlyweds, both working, and have been putting \$10 a week into E bonds and \$15 into the bank. We are shopping for a home. Would it be wise to switch our savings into stocks so we can make some money and have a bigger down payment on a house?

A. No. If you are actively looking at homes, the only place for your funds is in the savings bank—not even in E bonds. You may find a suitable home next week, next month or in a year. If you cash in your E bonds your interest will amount to far less than the bank interest.

If you buy stocks in small amounts now, the commission costs will be about 6 per cent. It will cost you the same to sell when you need the money for a house. That means you would lose 12 per cent on your money and have no way of determining whether you will get back as much as, less or more than you put in.

Q. I run a drug store in a small village in Iowa. My money is tied up in my business and in a farm which I rent out. I would like to start buying stock, but the nearest broker is 75 miles away. What would you advise?

A. You don't have to sit in front of a stock market ticker all day in order to be a successful investor.

However, you should make at least one trip to the city to discuss your plan with some brokers. (You can get a list of those in your area by writing to any one of the dozen and a half stock exchanges in the country.) When you get back home select one. Thereafter, you can do all your business by mail or phone.

It is quite possible the commercial bank in your town will execute orders for you. Often there will be a slight additional charge since the bank must pay the same brokerage commissions a private investor does. However, it may be worth it to you if you value the advice of your banker.

It is also possible that your town has a securities broker who is not a member of any large exchange, but deals "over-the-counter." Here again the individual concerned and your relationship to him may be a determining factor. In either case—bank or over-the-counter dealer—you can

always check the cost of doing business with them against the prices listed in the daily newspapers. Ordinarily, brokerage commissions start at 6 per cent for small investments and then go down sharply as the amounts involved increase. A \$2,000 purchase should cost you about \$25.

How Much Shall I Invest?

(See "Dollar Averaging Table," page 133.)

Investing is a long-time thing, for the simple reason that the vast majority of investors come from the ranks of the "another-day, another-dollar" folks.

Building our investment stake is a long-time "do-it-yourself" project.

What is the best system for timing our investments, in what amounts?

Q. I am 21, working on my first job. Can save about \$1,000 a year. Would like to buy a share of stock every time I get the money. How about General Motors?

A. General Motors is a fine choice, but not a share at a time. The commission cost is likely to be high. It would be far better to buy \$250 worth four times a year, thus cutting your brokerage fees way down.

Q. I have just inherited \$8,000. I've never invested before. I'd like to put it all into one stock so as to save commissions. Which would you advise?

A. All of anyone's investment funds should not be in one stock. You ought to select at least five different stocks, perhaps in as many industries. Total commissions will be slightly higher, but still constitute only a negligible percentage of your investment. And the diversification will be well worth it.

Q. We are young marrieds, 25, with a combined income of \$6,200 a year. We have insurance, plus \$1,200 in the bank, and a \$1,000 E bond—a gift. Money seems to slip through our fingers. Should we invest the \$1,200 in stock?

A. No, you need at least that much in an emergency cash fund, but if you have difficulty in saving, sign up on a monthly investment plan, either with a mutual fund, or a New York Stock Exchange firm. The regular payments may help you set up a savings pattern.

Q. I would like to build up to 100 shares of U. S. Steel, buying 10 shares whenever the price is low. What do you think of the plan?

A. You're asking for trouble. Who's going to ring a bell when the price is low? One hundred shares of Steel currently would cost about \$6,500; ten shares \$650.

You would find it more advantageous if you bought \$325 worth every 3 months. Total commissions would be a few dollars more a year but you would have the distinct advantage of "dollar averaging."

Q. We are in our 40's, with three children; have been able to save only \$1,000, but just received \$1,000 annual wage increase. Recently sold farm-land for \$3,000. Want to put it into stocks for income. What do you advise?

A. Put the \$3,000 into a savings bank at 3 per cent or a Federally insured savings and loan at 4 per cent. With the \$4,000 in the bank you will have a comfortable nest egg earning 3 to 4 per cent which is only \$40 to \$80 a year less than you could get in high quality income stocks. With that foundation you will then be entitled to take a bigger risk in increasing your capital by putting \$500 of your wage increase every six months into some good growth stocks of leading companies in the electronics, light metals, atomic energy, glass and aviation fields.

Q. My wife and I, both working, have accumulated sufficient insurance and savings and now would like to start buying stock, but don't know how to schedule our purchases. Is this a good time to start, or are we headed for deflation and lower prices?

A. Securities buying is not different from any other form of investment. You put \$10 or \$20 in the savings bank or bought E bonds whenever you had the money. Do the same with stocks. If you can accumulate a convenient sum—\$300 or so—every 3 months, buy the shares you like every three months.

Q. I am near 40, married, two children, earning \$20,000 to \$25,000 a year, have life insurance and 100 Avco. Can invest \$25 a week. Should I buy stocks or build savings in bank?

A. If you don't have at least \$5,000 in savings you ought to accumulate that much before you even think of stock. Thereafter you might consider putting \$300 quarterly into some good grade growth stocks in the aircraft, oil, chemical or electronic field.

What Securities Are Best for Me?

(See "Mutual Funds," page 127.)

Abraham Lincoln said a man's legs should be long enough to reach from his body to the ground.

What are your needs? Income, growth of capital, safety of principal?

Q. I am 31, married with 1 child, earn \$200 a week as an electrical engineer; have a home, savings account and insurance. Would like to start investing, buying 3 shares of A.T.&T. every six months. What is your opinion?

A. A.T.&T. is one of the top quality common stocks from the point of view of safety and stability. It has paid the same dividend, \$9 a share, for more than 35 years. But I don't see it as the investment for you.

In the first place, the dividend income will mean very little to you because it will be taxable in your highest bracket and because you are already earning a comfortable income.

With 30 years of investing ahead of you before retirement, it seems to me you could do better by investing in growth stocks which may pay little or no dividends now, but, by plowing back earnings into the business, may increase the value of your investment substantially by the time you get ready to call on your money for retirement support.

Q. My husband is 73 and I am 68. We get about \$120 a month in Social Security and have \$12,000 in E bonds. How could we go about increasing our income?

A. The \$12,000 in E bonds is earning about \$360 a year but you are not getting it now, when you need it, because these bonds pay no current interest. They should be cashed in and the proceeds put into A.T.&T. which will yield you about \$600 a year, or \$50 a month.

Q. We are both school teachers eligible for retirement next year. Our combined pensions will keep us quite comfortable but we would like some extra income, if possible, for travel. In addition to life insurance we have \$4,000 in E bonds and \$28,000 in savings accounts at 2½ and 3 per cent. What would you advise?

A. Since you already have a solid retirement pension base you can afford to take some risk with your funds in order to get higher than average income.

Continue holding the E bonds. You can cash them in after you retire, when the gain in their value will be taxable at a much lower rate than you now pay. Besides, they serve as a cash reserve. The \$28,000 should be switched into high in-

come securities yielding 6 or even 7 per cent. Most of these high income securities are not as safe as those yielding only 5 per cent, their dividends are not as stable, the industries they represent are cyclical—that is, have periods of good and bad business. But over the long term they average higher dividends than such steady earners as the utilities, food and insurance companies. Since you are relying on this additional income for "luxuries" any periodic drop in dividends would not seriously affect your living standards.

Q. I am a young man of 24, earning \$85 a week. I have \$200 in the bank and would like to begin buying stock. What kind of stock would you suggest? Don't intend to get married for 5 years.

A. \$200 in the bank doesn't seem enough; \$1,000 would be more like it, no matter when you intend to get married. (Besides, a young man's decision on this big step is not the determining one.)

Build up the equivalent of three to four months' salary, then begin buying growth stocks. Buy them indirectly through a mutual fund or directly on a monthly, quarterly or semi-annual basis, depending on how often you can accumulate \$300 to \$400 of investable money.

Q. Eight years ago, when my husband died, I put the \$50,000 proceeds from his insurance into insured savings bank accounts. He had lost money in stocks in the depression and had warned me never to buy stocks again. I find, however, that it is becoming increasingly difficult for me to live on my interest, about \$1,250 a year. What can I do?

A. Where your husband once lost by a decline in the market, you have lost by a decline in the dollar. The purchasing power of your \$50,000 is now closer to \$35,000—\$40,000 than it is to the \$50,000 you put into the banks and the buying power of your interest income has gone down correspondingly.

There is no 100 per cent safe investment. You can't deep freeze dollars.

To get more income out of your funds you will have to take most of them—but not all—out of the bank and put them to work. By dividing the money between stable common shares and good grade bonds you should be able to raise your annual income to about \$2,500 and still have funds working on either side of the inflation-deflation line.

The common-share half should be put into high grade utility, merchandising, food, tobacco shares. The other half should

go into top grade railroad and utility bonds and insured savings and loan accounts paying 4 per cent. The latter funds, in addition to earning 4 per cent, would also serve as your emergency cash reserve.

Q. I am a merchandising executive of 45 earning \$28,000 a year; married, no children. Have been buying bonds for 10 years on the payroll deduction plan because that is the best way for me to save. Would you suggest any other securities?

A. The bonds, in a way, are another form of cash fund, which can be retained in lieu of savings, although even at today's 3½ per cent rate E bonds do not yield as much as a savings bank until nearly their 5th year.

You should switch your weekly deduction into common stocks, buying them directly or via mutual funds (see "What About Mutual Funds," see below) and into tax-exempt municipal bonds. Because you are in a high tax bracket, don't look for stocks yielding high income now. What you want first and foremost is growth—stocks which will rise in value over the next 20 years. Make your choices from the electronic, light metal, chemical, oil, aircraft and related growth fields.

The municipals, of course, are hardly a growth security but a fixed value, fixed income bond. However, in current markets they are selling at substantial discounts from their maturity value. If you buy a good grade issue you have a safe bet it will be paid off 100 cents on the dollar at maturity which can mean a value gain of as much as 15 per cent over current prices. In addition their yield is not only historically high, but tax exempt. In your case this feature adds 35 to 40 per cent to their income value.

Q. My husband in recent weeks has been receiving letters from Canadian brokers offering shares in a mining stock at \$1. The last two nights he has received a telegram and then a phone call. What can you tell me about this broker? Is he dependable?

A. I wouldn't know him from Adam. But I can tell you a lot about him. His office

is in a back room in a building in Toronto, Montreal, Saskatchewan (choose one). His equipment consists primarily of a sucker list and a mimeograph machine—and a vivid imagination.

His letters start out by pointing up the virtues of International Nickel, or Kennecott, in order to prove he handles only quality issues. But when you are lulled into carelessness by his discussion of blue chips, he slips in the come-on for the junk he is trying to unload on you.

In 1990 we may well be living in a world of undreamed of automation, chemistry, light metals, atomic energy, synthetics, travel. None of your investments will give you much of a share in that future. You should look more to that future and de-emphasize today's stability and dividends. Even if you make a mistake in an investment you will have plenty of time to correct your course.

Q. I am confused by the fact that some stocks will yield only 5 per cent while others issued by companies just as well-known pay dividends amounting to 6 and 7 and even 8 per cent. American Telephone & Telegraph for example, as against the Pennsylvania R.R. and Bohn Aluminum.

A. When money goes to work its wage is set by the risks it must take. A.T.&T. has paid a dividend every year since 1881 and for the last 35 has paid a steady \$9 a year. This stability, abetted by the fact that it is a basic utility, enjoying a monopoly, attracts investors to it who are willing to accept only 5 per cent for the use of their money.

Both Pennsy and Bohn Aluminum are good companies, also. Pennsy has paid dividends every year for more than a century and Bohn for more than 30 years. But their business, revenues, profits and dividends have been nowhere as stable as A.T.&T.'s. They vary with competition in their own industries, with the general state of business, etc. As a result the investor who puts his money into Bohn will demand a higher rate of return than he will accept from A.T.&T.

What About Mutual Funds?

One of the most interesting developments of the last quarter century has been the rise of mutual funds. The first were formed—in this country—in the Twenties, but the main army came along in the Forties when increased money in circulation combined with war-time shortages of goods stepped up savings. Today

there are more than 125 mutual funds in operation in this country and their total assets are about \$10 billions.

The mutual funds are investment clubs on a giant and professional scale. They are pools of capital running from a few millions to over a billion dollars. Anyone can join by paying the going price for the

shares; anyone can quit by turning in his shares for redemption. The fund always stands ready to sell new shares (therefore its designation as an "open-end" fund); is ready to redeem the shares of those who want to leave. The shares are not traded on the securities markets, but are bought from and sold back to the fund.

The mutual fund offers several advantages: professional management of funds, diversification of investment, the regularity of monthly purchases—of extreme importance in setting up good investing habits and the convenience of having to keep track of only one security.

Those who need additional pressure to save, can pick a "contractual" plan. These, running for 10 years, charge off about one half the entire plan's commissions against the first one to two years' payments, so that if you should quit before the completion of the plan you will suffer quite a deficit in commissions paid, but not used. Statistics prove that this type of plan has been very helpful in keeping investors "in line."

All these features, of course, cost you money. You pay a commission of anywhere from zero to 9 per cent when you buy. (This same commission, however, generally includes the fee for redemption.) In addition there is a continuing annual charge reckoned as a percentage of the total amount of money in the fund.

The question of whether you should buy mutual funds or do your own securities selecting depends upon yourself in just about the way you decide whether you will paint the playroom yourself or call in a professional.

If you have no inclination to study and analyze, no patience with figures, no time and no interest in corporate and business affairs, perhaps the mutual fund offers you a safer way to handle your problem.

Not that you can pick a mutual fund blindfolded. There are funds to serve almost every purpose. Some put their money into conservative 3 and 4 per cent bonds; others buy only speculative growth stocks of the wildest type; still others aim for high current income. A young man of 24 putting all his funds into a bond account would be adding little to his future financial stature; an elderly person with sufficient capital to live comfortably would be foolish to put all his money into a mutual fund interested only in growth by 1980.

A mutual fund dividend is generally composed of two parts: an income dividend derived from the income the fund itself receives from its holdings in U. S. Steel, General Motors, du Pont, etc.; and a capital gains dividend resulting from

profits it makes on securities transactions. The latter, of course, varies widely. If the general market is in a broad downtrend, only the unusual fund management will be able to show trading profits. To the shareholder, however, these trading profits provide a distinct tax advantage. You declare only the income portion of the dividend as straight income. The capital gains portion is taxable at only half your regular rates and at never more than 25 per cent.

As a rule mutual funds—especially the larger ones—move pretty much in step with the general market. That means that in the last dozen years they have had a generally favorable background—a fact which you must keep in mind when an eager salesman is high-pressuring you into signing on the dotted line. Salesmanship in mutual funds is likely to be considerably higher pressured than in the case of a Stock Exchange house. Reason: mutual fund commissions are considerably higher, much more rewarding to the salesman.

Q. I am an Army staff sergeant with 8 years to go to retirement. I have never bought stocks because I am often out of the country for months and have no way of keeping in touch with the stock market. Still I would like to start putting some funds aside to add to my pension. Is it too late? Have \$100 a month to invest.

A. It's never too late. An eight-year investment program is better than a 7-year, and a 7-year better than a six.

A mutual fund would be ideal for your purpose, since it would relieve you of all bookkeeping, safekeeping of securities, receiving and banking dividends, etc.

Select a mutual fund that suits your purpose. Better yet, select two—one which specializes in growth stocks; another which has demonstrated its ability over the last 10 years or more of earning and paying out high income. This is, of course, a compromise. But all investing is a compromise between what you want and what you get for what you want to pay. If you put \$50 a month into each, all you have to do is send the two checks and the funds will do the rest.

Q. My son is in the Army. He sends me his monthly check and asked me to invest it for him. He will be out in 2½ years and then plans to marry. Would you advise a mutual fund?

A. No. If he is going to need this money to set up a home in 2½ years, there is no point putting it into a fund—or any form of stock investment—now. The best place for his money is in a savings account.

Q. A mutual fund salesman has insisted

he can show me that I can double my money in 10 years with no risk. What should I do?

A. Show him to the door. He's being dishonest. No one can predict market action ten years in advance. No investment is risk free.

Q. Are mutual fund investors guaranteed against loss? I notice a very large, reputable bank receives the payments for my fund.

A. No mutual fund, bond, debenture, common or preferred share buyer is guaranteed against loss. No investment in the world has an absolute guaranty with the exception of U. S. government bonds, and savings insured by instrumentalities of the U. S. government—the Federal Deposit Insurance Corp. and the Federal Savings and Loan Insurance Corp.

Mutual Fund Life Insurance

Q. I have heard I can get life insurance with a mutual fund. Would it be a good idea to cash in my regular life insurance and buy a mutual fund instead?

A. No. Mutual fund life insurance is excellent and generally very reasonably

priced. But it is no substitute for regular life insurance.

For example, if you were to sign up with a mutual fund for \$50 a month for 10 years, your policy would start as a \$6,000 plan. When you had paid in \$100, your insurance protection would be reduced to \$5,900. When, after three years, you had paid in \$1,800, your insurance protection would be down to \$4,200. The last month of your 10-year plan, your insurance protection would be \$50.

If you should die at any time during the 10 years, the insurance would immediately pay the balance owing on your mutual fund program and the entire, completed fund would be turned over to your beneficiary.

If you are in the upper 40's or the early 50's, mutual fund insurance can be much cheaper than regular term insurance (although under some plans the charges can be boosted at any time if the insurance company finds the risk has become too great). But it is hardly a life-time program and should be used for what it is—insurance to assure the completion of an investment program—rather than for any form of life insurance.

What About Bonds—Government or Otherwise?

A bond is an instrument of debt. If you buy a Bethlehem Steel bond you are a creditor of the company.

At one time in our history, the gilt-edge bond was considered the prime investment. They were the widows' and orphans' safeguard. Colleges, hospital funds, church funds all were overwhelmingly committed to bonds. Common stock was for the "flashy" crowd. The last quarter century has changed all that.

When the Great Depression hit in full force, many gilt-edge bonds went the way of stocks. And when the recovery and inflation set in, it did not take investors long to discover that bonds may be more stable than common stocks, but when they were so stable that they could not keep up with the constantly mounting cost of living they were no longer doing their job as the perfect investment. Where does that leave bond investing today? Answer: It is still a proper part of many person's investment diet, but only a part.

Q. I have two youngsters, 8 and 11. Their grandparents have given them \$500 each. I was thinking of buying them E bonds, to help prepare for their college education. What would you advise?

A. In the next nine years, \$500 worth of E bonds will be worth a third more. Of

that you can be sure. But, you then have to ask yourself, how much college education will you be able to buy with about \$680? You might as well put the money in a savings bank where you can begin drawing 3¼ per cent immediately rather than having to wait nearly 9 years to average that amount.

But beyond the actual rate of return is the question of investment purpose. You can't expect two youngsters to get very excited about E bonds. If these boys are interested in railroads, or jet fighters, or chemistry, or radio-TV, or ships, don't you think they could get a lot more satisfaction out of receiving reports from—and even attending meetings of—the Chesapeake & Ohio, or McDonnell Aircraft, or Union Carbide, or Radio Corp., or American Export Lines than from a small certificate tucked away in your strong box which they will never see?

Let's look at it this way. The \$500, or the \$680 will be neither here nor there when college tuition comes due. Why not give it a chance to do an educational as well as an investment job?

Q. When my husband died 7 years ago I was advised to put the \$40,000 insurance into H bonds. But now I find I can't live on it. What would you advise?

A. At least half the fund should be put to work in stocks yielding 5 and 6 per cent, which is at least 50 per cent more than the bonds are yielding.

Q. If, for example, a Missouri Pacific RR bond yields better than 6 per cent, why do people buy railroad common stocks? Wouldn't the bond be safer?

A. The bond is safer. But it is not as inflation proof as common stock. The Missouri Pacific 4½'s, for example, yield \$42.50 per year—period. It's true that's a good yield. But that's all it's ever going to be, no matter how much inflation we may run into.

If you are interested in railroad investments, such a bond—and the liens of other roads in this category—certainly have a place in your portfolio. But not to the exclusion of the more elastic common shares.

Q. We are retired on a small pension, plus Social Security. Friends have told us that there are bonds which are tax exempt. What are they and why wouldn't they be a good idea for us?

A. Interest paid on bonds issued by town, city and state governments, by highway, bridge and port authorities, by public school districts, by municipal water systems is exempt from Federal taxation. That's in the Constitution.

This provision makes these bonds—commonly called "municipals"—an ideal investment for wealthy persons in the 40, 50 and higher per cent income tax brackets. Today many of these bonds which, incidentally, enjoy a fairly high degree of safety, yield 3 per cent and better. To a man in the 50 per cent income tax bracket that is as good as 6 per cent from a common stock which is not likely to have the same degree of safety.

But unless you are in a substantial tax bracket (and it may be at your advanced age—with double exemptions and special medical benefits—that you pay no tax at all) the municipal bond represents a reduction in income with no offsetting tax benefits. In other words, why give up 1 or 2 per cent for tax exempt income if you are already tax exempt?

The Well-Balanced Investment Program

There is no one single perfect investment medium, any more than there is one all-purpose food, or one all-purpose automobile.

An investment program which does its job is one which will stand up in all sorts of economic weather—boom or recession, inflation or deflation. No one type of security can do that. The best program, then, must be a blend of securities. What goes into this blend?

Common stocks—they have demonstrated their ability over the years to rise in value and to increase dividend payments to shareholders as the cost of living rises. The reason is simple: A common share represents a part of a business. When prices rise, the value in dollars of various assets of a business rises—inventories, factories, equipment, patents. So each part of the business is worth more. Secondly, selling prices and percentage of profit also climb. Result: higher dividends.

Bonds—government or corporate—are your friends during time of deflation. A bond differs from a stock in that it represents a fixed claim against a company. A \$1,000 bond calls for repayment of \$1,000 when it matures and a fixed amount of interest—say \$50, every year until it comes due. If prices go down that is no concern of yours. You continue to get the \$50, and, what is more, your fixed income has greater purchasing power.

Government savings bonds possess sev-

eral advantages as well as disadvantages. The advantages: they are price fixed. You can redeem them at short notice and will get, to the penny, what a schedule of redemption calls for. Those which do not pay current income—the E's, for example—have a tax advantage for those investors who can keep them into their retirement years. It is not necessary to report annually the gain in value of these bonds. By delaying the income tax liability until your retire, when reduced earnings will either cut your income tax liability or exempt you from income taxes entirely, it is possible to make E bonds a tax-free form of investment.

Their disadvantages: their yield is relatively low; 3¼ per cent is now being paid by many large city savings banks and even 4 per cent is obtainable from Federally insured savings and loans. Their growth in value in the early years of their 9-year term is low. If you have to cash them in before the fifth year, you will get considerably less than 3¼ per cent income on your money.

Different types of securities have different advantages and disadvantages. It is up to the careful investor to mix them into his program so as to make a blend which will help him meet any economic circumstances.

"Yield" represents the annual wage your money is earning per dollar of investment. If you own \$1,000 worth of securities which

return you \$50 a year in dividends or interest, your investment is yielding 5 per cent (\$50 divided by \$1,000). A stock selling at \$40 and paying \$2 a year in dividends likewise yields 5 per cent (\$2 divided by \$40); a stock selling at \$50 and paying a \$3 dividend yields 6 per cent (\$3 divided by \$50).

In the same way a \$1,000 bond paying \$45 in annual interest yields $4\frac{1}{2}$ per cent. But if the bond is selling for only \$900, the yield advances to 5 per cent (\$45 divided by \$900).

Many investors with sentimental attachment for a stock they bought many years ago at a much lower price will hold on to it even though its current yield is far below their requirements. For example, a stock purchased at 50 and now selling at 80 but still paying \$2 in annual dividends is actually yielding only $2\frac{1}{2}$ per cent (\$2 divided by \$80) and not 4 per cent (\$2 divided by \$50) as its owner fondly recalls. If the investor requires more income, it would be good investment practice to sell the shares and reinvest them in a stock paying a higher yield on its current price.

What about Systems and Services?

Systems for "beating" the stock market are as numerous as those for "beating" the horses. The only point neither ever explains is why the discoverer—so interested in making money—is so anxious to share his system with others instead of enriching himself.

Trying to get something for nothing is one of the oldest desires known to man. Understandably, the sight of common stocks rising or falling \$2 and \$3 in a single day is an intriguing picture. "If I could only buy a stock at \$15 and sell it at \$17 the next day, I would soon be living in the lap of luxury." It sounds like an idea.

Yet the financial centers of our country are manned by thousands of well educated and experienced men and women who have all the statistics and the machinery of the market place at their finger tips and yet continue working for a living year in and year out, even as you and I. If there were an easy road to stock market riches and to a life of ease and luxury you would think they would have found it long ago. The number of fortunes made in Wall Street is hardly any more significant than the number made in the manufacture of shoes and dresses, or in marketing of vegetables or radio sets.

In addition to the get-rich-quick systems there are the thousands of advisory

services. Their value—as common sense alone would dictate—depends pretty much on what they set out to do. Obviously those who claim they can help you double your money in a fortnight—every fortnight of the year—are no better than the "beat the market" systems. Others perform a service in presenting sober discussions of economic trends and analyses of various securities which the ordinary investor could otherwise not arrive at himself.

What's an Investment Club?

An investment club is usually formed by 10 to 20 friends.

Generally an ideal program calls for monthly meetings. Officers consist of a president, vice president, secretary and treasurer-agent who should be the only one to deal with the broker.

A broker may be willing to come to several meetings to discuss securities within the limits of the club's program. But in the main, a committee appointed at each meeting is requested to bring in data on several issues for discussion. A final vote determines which one the club wants to buy; the treasurer-agent collects the monthly subscriptions and orders for the shares.

Those seeking to set up an investment club can receive invaluable help by writing to the National Association of Investment Clubs, 2224 National Bank Building, Detroit 26, Mich.

How Safe Is a Preferred Issue?

The label "preferred" on a stock issue indicates that it ranks ahead of the common stock when it comes to passing out dividends and—in case of liquidation—in distribution of assets.

That means that Company A preferred is a safer investment than Company A common. It does not mean that Company A preferred is a safer investment than Company B common because the second company may be so far superior to the first that its common shares are of better quality than the preferred share of the other. In other words, the label "preferred" is not absolute, but merely relative as an indicator of value.

There are many classes of preferred: straight preferred, cumulative, convertible, participating—to name the most common.

The straight preferred promises to pay a regular dividend of, say \$3 every year in four 75 cent payments. However, if the company has a bad year, the preferred dividend may be omitted.

The cumulative preferred holds the same position except that it promises to make up any omitted dividends before paying the common anything.

The label convertible indicates that the preferred share may be converted—at option of the investor—into a certain number of common shares. If the corporation enjoys a boom and the common begins to climb, he can turn in his preferred shares and take the common.

Participating preferreds, rather rare, allow the holder to share in any boom time bonanzas by calling for extra dividend payments after the common has received its payments.

What Is "M. I. P."?

A few years ago N. Y. Stock Exchange brokers initiated an investment plan whereunder persons able to save as little as \$40 every three months could systematically buy any stock listed on that exchange on a pay-as-you-go basis. It is called the "monthly investment program," although it also makes provisions for quarterly payments.

It is most important to realize from the first that this is NOT installment buying of securities, in the same sense that you buy a refrigerator or an automobile on the installment plan. Under M.I.P. you acquire only the exact number of shares—figured to 4 decimal places—that you have paid for. At any given moment you do not owe the broker anything. You are not committed to buy anything for any amount over any length of time. You merely express your desire to invest in, say, General Electric, at the rate of \$40, or \$50 or \$70 a month. And as long as you keep sending in your monthly checks the broker keeps buying you as much General Electric stock as your payment, less commissions, will cover.

Commissions are computed at the regular rate for all stock buying and selling on the exchange, which calls for about 6 per cent on amounts less than \$100.

If you continue the plan for any length of time you may build up to, say, 25 shares of G. E. at which point you tell the broker to begin applying your payments toward the purchase of U. S. Steel, or General Motors, or National Dairy. In fact, you may set up a program whereby you can buy G. E. with one month's payment, Steel with the second and General Motors with the third. And then start the cycle all over again with G. E. the fourth month.

But no matter what you buy, in what amounts, or whether on a monthly or quarterly frequency, you are buying the stock on a pay-as-you-go basis, not an installment plan. Whatever shares and fractions of shares you acquire are yours as completely as is a fully paid automobile or TV set. There is no margin involved. It is your property, completely. You own it, you can vote the shares, you receive the dividends. You can sell it whenever you please.

What's a Growth Stock?

Industry in this country is generally believed to be growing at the overall rate of 3 per cent a year. A "Growth" company is one which has shown a record of expansion—volume of business, net profit—greater than 3 per cent a year.

The aircraft, chemical, atomic energy, light metal, jet fuel, electronic, drug and airlines are all industries generally described as "growth" fields; whereas railroads, utilities, building material, gold mining, textiles and liquor stocks are usually denied this appellation. However, over the years, it has been possible to lose money in the first group and make it in the second.

The term at best is a loose designation, and should never blind an investor to the necessity of looking into each security individually.

How to Read a Stock Table

45 $\frac{1}{2}$ % 39 $\frac{3}{8}$ % Am Can 2 53 42 $\frac{3}{8}$ % 42 $\frac{3}{4}$ % 42 $\frac{1}{8}$ % 42 $\frac{1}{4}$ % — $\frac{1}{8}$

You can learn the going price for your stock every day. Tables showing N. Y. Stock Exchange transactions are carried in one form or another in hundreds of daily newspapers. They read something like the figures shown above.

What does all this mean? That the range in price for American Can Co. stock this year has been 45 $\frac{1}{2}$ % high, 39 $\frac{3}{8}$ % low. It pays an annual dividend of \$2 per share. That

in the day covered by the table, 5,300 shares of the stock changed hands. The first trade of the day was at 42 $\frac{3}{8}$ % (\$42.375 a share.) Later in the day it sold for as high as 42 $\frac{3}{4}$ % (\$42.75 a share) and as low as 42 $\frac{1}{8}$ % (\$42.125) and that the last trade of the day was at 42 $\frac{1}{4}$ % (\$42.25). At that price it was $\frac{1}{8}$ % (12 $\frac{1}{2}$ cents a share), below the closing price of the previous day, which must have been, of course, 42 $\frac{3}{8}$ %.

The line may be complicated by the letters "xd" after the dividend rate. This indicates that the buyer who acquired the stock today does not get the current dividend which was credited to the person who held title yesterday. The stock, in other words, is "xd" or "ex-dividend" today. In the cases where a regular dividend rate is not maintained, the dividend figure will be followed by a letter "a," "b," "g" or any other used by that particular newspaper. Reference to the footnotes will explain that the dividend figure given is augmented by payments in the form of additional shares, or that this is the amount paid so far this year, or the amount paid last year, etc.

What Are the Averages?

The best known, most often-quoted index to the course of the stock market is the Dow-Jones Industrial Average.

This is a figure compiled from prices of 30 leading common stocks on the N. Y. Stock Exchange, including such world famous companies as U. S. Steel, General Motors, American Can, American Telephone, Eastman Kodak, Chrysler, Standard Oil of N. J., Woolworth, etc.

A similar average, based on the price of 20 railroad stocks, is called the Dow-Jones Railroad Average and a third, based on the price of 15 big utilities, provides the index for that field.

What's Dollar Averaging?

It's a system of buying securities by the dollar's worth, instead of the number of shares, in exactly the same way we may say "three dollars worth" when we draw up at a gas pump, instead of "8 gallons." By using this system—in buying stocks or "gas"—you get more shares, or gallons, for your money when the price is low and less gallons when the price is high. The total result is lower average price per unit. Here's how it could work out in stocks:

Purchases	Price of stock	By dollar averaging \$500		By 10 share units	
		Shares bought	Cost	Shares	Cost
1st.....	\$50.00	10	\$500.00	10	\$500.00
2nd.....	60.00	8	480.00	10	600.00
3rd.....	65.00	8	520.00	10	650.00
4th.....	45.00	11	495.00	10	450.00
5th.....	30.00	17	510.00	10	300.00
6th.....	35.00	14	490.00	10	350.00
7th.....	40.00	13	520.00	10	400.00
8th.....	45.00	11	495.00	10	450.00
9th.....	50.00	10	500.00	10	500.00
Totals.....	....	102	\$4,510.00	90	\$4,200.00
Average cost.....	....	...	\$44.28	...	\$46.66

Glossary of Investment Terms

AT THE MARKET: An order to buy or sell "at the market" calls for its execution at the best possible price on the trading floor at the time the order arrives.

BEAR: Someone who believes the market will decline.

BID AND ASKED: The bid is the highest price anyone wants to pay for a security at a given time; the asked is the lowest price anyone will take at the same time.

BLUE CHIP: Common stock in a company known for wide acceptance of its products or services and for its ability to pay dividends in good times and bad.

BOND. Basically an IOU or promissory note of a corporation, usually issued in multiples of \$1,000, although \$100 and \$500 denominations are not uncommon.

BULL: One who believes the market will rise.

CAPITAL GAIN OR CAPITAL LOSS: Profit or loss from the sale of a capital asset. A capital gain may be either short-term (6 months or less) or long-term (more than 6 months). A short-term capital gain is taxed at the reporting individual's full income tax rate. A long-term capital gain is taxed at a maximum of 25 per cent, depending on the reporting individual's tax bracket. Up to \$1,000 of net capital loss—that is, when you sell securities at a lower price than you paid for them—is deductible from the individual's taxable income during the year reported. If the capital loss is more than \$1,000, as much as \$1,000 annually is deductible in each of the next five years. The amount of capital

loss that may be deducted is reduced by the amount of any capital gain.

COMMISSION: The broker's fee for purchasing or selling securities or property for a client. On the N. Y. Stock Exchange commissions average about one per cent of the market value of stocks and approximately one-quarter of one per cent on bonds.

COMMON STOCK: Securities which represent ownership interest in a corporation. (For difference between common and preferred stock, see *How Safe Is a Preferred Issue?*, page 131.)

CONVERTIBLE: A bond, debenture or preferred share which may be exchanged by the owner for common stock or another security, usually of the same company, in accordance with the terms of the issue.

DEBENTURE: A promissory note backed solely by the general credit of a company and not secured by a mortgage or lien or any specific property.

DOW THEORY: A theory of market analysis based upon the performance of the Dow-Jones Industrial and rail stock price averages. The theory says that the market is in a basic upward trend if one of these averages advances above a previous important high, accompanied or followed by a similar advance in the other. When the averages both dip below previous important lows, this is regarded as confirmation of a basic downward trend.

MARGIN: The amount paid by the customer when he uses credit to buy a security, the balance being advanced by the broker. Under Federal Reserve Regulations, the margin required in the past 20 years has ranged from 40 per cent of the purchase price all the way to 100 per cent. It is currently 70 per cent.

OVER-THE-COUNTER: A market for securities made up of securities dealers who may or may not be members of a securities exchange. Over-the-counter is mainly a market made over the telephone. Thousands of companies have insufficient shares outstanding, stockholders, or earnings to warrant application for listing on a stock exchange. Others may prefer not to make public all the information which listing requires. Securities of these companies are traded in the over-the-counter market between dealers who act either as principals or as brokers for customers. The over-the-counter market is the principal market for U. S. Government bonds, municipals, bank and insurance stocks.

PAR: In the case of a common share, par means a dollar amount assigned by the company's charter for balance sheet use. Par value has little significance so far as

market value of common stock is concerned. In the case of preferred shares and bonds, however, par is important. It often signifies the dollar value upon which dividends on preferred stocks, and interest on bonds, are figured. The issuer of a 3 per cent bond promises to pay that percentage of the bond's par value annually.

RIGHTS: When a company wants to raise more funds by issuing additional securities, it may give its stockholders the opportunity, ahead of others, to buy the new securities in proportion to the number of shares each owns. The piece of paper evidencing this privilege is called a right. Because the additional stock is usually offered to stockholders below the current market price, rights ordinarily have a market value of their own and are actively traded. In most cases they must be exercised within a relatively short period. Failure to exercise or sell rights results in actual loss to the holder.

SHORT SALE: A person who believes a stock will decline and sells it though he does not own any has made a short sale. For instance: You instruct your broker to sell short 100 shares of ABC. Your broker borrows the stock so he can deliver the 100 shares to the buyer. The money value of the shares borrowed is deposited by your broker with the lender. Sooner or later you must cover your short sale by buying the same amount of stock you borrowed for return to the lender. If you are able to buy ABC at a lower price than you sold it, your profit is the difference between the two prices—not counting commissions and taxes. But if you have to pay more for the stock than the price you received, that is the amount of your loss. Stock Exchange and Federal regulations govern and limit the conditions under which a short sale may be made on a national securities exchange.

STOCK DIVIDEND: A dividend paid in securities rather than cash. The dividend may be additional shares of the issuing company, or in shares of another company (usually a subsidiary) held by the company.

TAX EXEMPT BONDS: The securities of states, cities and other public authorities specified under Federal law, the interest on which is either wholly or partly exempt from Federal income taxes.

WARRANT: A certificate giving the holder the right to purchase securities at a stipulated price within a specified time limit or perpetually. Sometimes a warrant is offered with securities as an inducement to buy.

RELEARNING MATHEMATICS

Part II—Algebra

By

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The INFORMATION PLEASE Staff

This section covering algebra is Part II of our Relearning Mathematics series, initiated in our 1957 edition.

Since a complete course in algebra would require more space than can be allocated in this edition, Professors Roskopf and Kinsella have dealt only with some of the troublesome problems in the study of algebra.

We are confident that if you understand the problems discussed here, you can manage all the problems of a standard algebra text book. At least we hope so.

We are repeating the introduction to last year's section because we believe the counsel offered applies to this section on algebra.

INTRODUCTION

This section is intended to be a refresher course for parents who are faced with the problem of helping children with their lessons in mathematics. It is primarily for the parent who studied mathematics many years ago but has, inevitably, grown rusty and lacks familiarity with current methods of instruction.

Teaching methods today are different in many respects from the methods of the past. This is an important consideration because, too often, well-meaning parents who try to help their children employ methods which are no longer in use. This obviously confuses the child and creates problems for the teacher.

We strongly counsel parents who may try to help their children with the aid of this section not to attempt it without proper preparation. You may find, when you turn to our refresher course, that you need a little time to get the hang of it yourself. In other words, don't wait until your boy or girl comes to you with a problem. We suggest that you give yourself a reasonable amount of time in advance to study the entire section and then give special attention to the specific grades that your youngsters are currently attending.

While our emphasis is on helping children at school, we also have included instruction on pre-school training which will enable you to prepare the four-year-olds, bless them, for kindergarten matriculation.

It was our endeavor to provide a simple, concise and useful course in mathematics, which would help not only parents with their children but which would also revive the interest and improve the understanding of any adult.

See end of this section on page 157.

DAN GOLENPAUL, Editor

As you talk with your senior high school student's mathematics teachers at parent-teachers meetings or in conferences, you will become aware that these teachers are more interested in explaining the *why* of mathematics to him than in cramming his head with formulas, rules, and facts.

Such an approach to teaching mathe-

matics is relatively new. These pages reflect this new point of view. If you, as a parent, are to be able to help your child overcome some of his difficulties in algebra or geometry or trigonometry, you must be familiar with the new approaches. You will want your help at home to fit in with the instruction that your child receives in school.

Why Study Algebra?

During the 9th grade your boy or girl will be busy studying algebra. You will hear remarks about finding "x" and using letters instead of numbers. You may be challenged with the question, "Why do we have to take algebra?"

Algebra is necessary for many occupations. This is obvious in professions like engineering and architecture, but not so obvious in medicine, dentistry, pharmacy, or nursing. However, those professions require preparation in physics, chemistry, and biology. Clearly, algebra skills and the thinking that is a part of algebra are essential to an understanding of any one of the sciences mentioned.

Modern business and manufacturing require algebra to solve important problems. The price of a given product depends upon the number of units sold and the costs per unit. What price will lead to the largest

sales with the smallest costs? Algebra helps to solve that problem.

Success in manufacturing a product depends upon maintaining a consistent quality. Here probability and statistics enter the picture. Algebra is basic in a study of these mathematical sciences.

Insurance, accounting, and investing use the ideas developed in algebra. Today, skilled craftsmen—carpenters, machinists, electricians and plumbers—can benefit from a study of algebra. Their work is becoming more technical with the increased complexity of building materials and appliances.

A person in our modern world who is not familiar with the symbolism of algebra is akin to a visitor to a country whose language he does not know. Just as a child stumbles in his first efforts to learn a language so a child's first stumbling block in algebra may be the use of symbols to represent numbers.

What Symbols Mean

An effective device to help your child understand algebraic symbols is to point out to him the wide use of symbols in everyday life. A symbol is something that stands for something else. It may be a word, a mark, a letter, a numeral, a sign, an abbreviation, a gesture, or any other means of communication that suggests something because of a resemblance, a relationship, or a convention. Some symbols are so familiar that we do not think about them at all. The lights at a street intersection, the signals of a traffic policeman, the center line

of a highway, are symbols that a driver of a car must interpret correctly.

Your child is already familiar with symbols representing arithmetic processes like "+," "−," "÷," "×," "√." The letters used in algebra stand for numbers. By writing

$$c = np$$

where *c* represents the total cost, *n* the number of articles bought, and *p* the price of each article, we have a formula that summarizes a host of individual problems from arithmetic.

Laws of Arithmetic

Through the first eight grades, your beginning algebra student has learned to understand and to work with numbers like these:

$$8; 15; 9,678,105; \frac{3}{4}; \frac{5}{16}; 1.7; 0.625$$

He found that

$$3 + 5 = 8 \quad \text{and} \quad 5 + 3 = 8$$

$$16\frac{3}{4} + 5\frac{1}{2} = 22\frac{1}{4}$$

$$\text{and } 5\frac{1}{2} + 16\frac{3}{4} = 22\frac{1}{4}$$

$$46.2 + 35.7 = 81.9 \text{ and } 35.7 + 46.2 = 81.9$$

That is, the *order* in which addition is done does not affect the sum. You can interchange the two numbers, add, and the same answer results. The examples are illustrations of the *commutative law for addition*. By using symbols, the law can be summed up in one line: For all numbers a and b ,

$$a + b = b + a$$

There is a *commutative law for multiplication*, too. Look at the examples:

$$\begin{array}{l} 2 \times 3 = 6 \quad \text{and} \quad 3 \times 2 = 6 \\ \frac{1}{2} \times \frac{3}{5} = \frac{3}{10} \quad \text{and} \quad \frac{3}{5} \times \frac{1}{2} = \frac{3}{10} \\ 1.2 \times .6 = .72 \quad \text{and} \quad .6 \times 1.2 = .72 \end{array}$$

Again, with the use of symbols, all examples are wrapped up in a single statement: For all numbers a and b ,

$$a \times b = b \times a$$

There are several ways to write a multiplication in algebra. Sometimes parentheses are used,

$$(3)(4) = 12$$

Notice that the sign for multiplication " \times " is omitted. Another way to write the product is to use a center dot " \cdot " as in the following example:

$$4 \cdot 5 = 20$$

Whenever there is no danger of misunderstanding the center dot is omitted:

$$3 \cdot a = 3a; x \cdot y = xy$$

and the number and letter, or letters, are written next to each other to indicate a multiplication. Of course, the center dot could not be omitted in

$$4 \cdot 5$$

for then there would be confusion with the number "45."

When your child had to add three or more numbers, he discovered that he added two of them first; then he added the third to their sum. Through many examples, he

learned that it made no difference which two numbers he added first: the total sum was the same. Add:

$$\begin{array}{r} 3 \quad 3 + 7 = 10 \quad 9 + 7 = 16 \\ 7 \quad 10 + 9 = 19 \quad 16 + 3 = 19 \\ 9 \end{array}$$

Or, we can write the example:

$$\begin{aligned} (3 + 7) + 9 &= 10 + 9 \\ &= 19 \\ 3 + (7 + 9) &= 3 + 16 \\ &= 19 \end{aligned}$$

The way in which the numbers are associated does not affect the sum. This is true of any three numbers and is the *associative law for addition*. In symbols we have: For all numbers a , b , and c ,

$$(a + b) + c = a + (b + c)$$

There is an *associative law for multiplication*. That is, when we multiply three or more numbers, we multiply them two at a time. We associate them. For example,

$$\begin{aligned} (3 \times 4) \times 6 &= 12 \times 6 = 72 \\ 3 \times (4 \times 6) &= 3 \times 24 = 72 \end{aligned}$$

In general, for all numbers a , b , and c ,

$$(ab)c = a(bc)$$

The last law from arithmetic that is explicitly stated for algebra students is the *distributive law* of multiplication when adding. Whenever your child does a long multiplication, he is using the distributive law—even though he may not realize it. The law says: For all numbers a , b , and c ,

$$a(b + c) = ab + ac$$

As an example, consider

$$\begin{aligned} 3(4 + 5) &= 3 \cdot 4 + 3 \cdot 5 \\ 3 \cdot 9 &= 12 + 15 \\ 27 &= 27 \end{aligned}$$

We can add first; then multiply. Or, we can multiply first; then add.

Directed Numbers, + and -

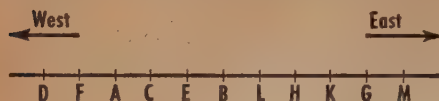
Very early in the ninth grade your child will be studying *directed numbers*:

$$\begin{aligned} +2; +17; -3; -16; \\ -1.5; +2.35; -\frac{2}{3}; +\frac{5}{16} \end{aligned}$$

We shall want the laws of arithmetic—the associative, commutative, and distributive laws—to apply also to this new kind of number. That is the reason for mentioning those laws.

An excellent way to interpret directed

numbers is through the use of an east-west road with markers at one-mile intervals.



Trips from C to L or A to B or H to M are all trips of 3 miles east. As a symbol for these trips, use $+3$. Trips from E to F or L to C or G to L are all trips of 3 miles west. As a symbol for these trips to the west, use -3 . Now, you can give interpretations for a trip in either direction in terms of a directed number.

At any point in mathematics where a new kind of number is introduced, you learn how to operate with these numbers; that is, how to add, subtract, multiply and divide two of these numbers. Addition can be interpreted very nicely through the use of the east-west road with milestone markers.

Consider addition. A trip is made from F to E and then from E to L. What is the mileage? Of course, it is 5 miles east. But let us make an interpretation in terms of directed numbers; it is

$$(+3) + (+2) = +5$$

If a trip is taken from K to L and then from L to A, the total mileage is 6 miles west. In terms of directed numbers, the trips can be interpreted as

$$(-2) + (-4) = -6$$

From a number of examples of this sort, your child can develop a rule for adding two directed numbers with like signs.

Now, let us consider a trip that involves going first in one direction and then in the other direction, say a trip from D to B and then a trip from B to A. This is 5 miles east followed by 3 miles west, or

$$(+5) + (-3) = +2$$

since the traveler will be 2 miles east of his starting point. A trip from K to A and then from A to B is a trip 6 miles west followed by a trip 3 miles east; the traveler ends up 3 miles west of his starting point. In our symbols, the interpretation of the problem is

$$(-6) + (+3) = -3$$

Again, after a number of examples of this sort, a rule for operating correctly can be formulated.

Although subtraction can be explained by

using an east-west road, a better way is to make use of what your child knows about subtraction of whole numbers. Fundamentally, finding the difference of two numbers, say 16 and 9, is the problem of finding what number added to the second gives the first. That is, $9 + ? = 16$; the answer, of course, is 7. The process is related to the check of subtraction:

$$\begin{array}{rcl} 16 & \leftarrow & \text{minuend} \\ -9 & \leftarrow & \text{subtrahend} \quad \rightarrow 9 \quad \left| \quad \text{add} \\ \hline 7 & \leftarrow & \text{difference} \quad \rightarrow 7 \quad \downarrow \\ & & 16 & \leftarrow & \text{minuend} \end{array}$$

In words, the difference is the number that is added to the subtrahend in order to yield the minuend.

Let us make use of this idea in subtraction of directed numbers. There are the following six types of subtraction examples:

(A)	(B)	(C)	(D)	(E)	(F)
$+3$	$+7$	$+7$	-3	-3	-7
$+7$	$+3$	-3	$+7$	-7	-3
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

In type A, *think*, what number added to $+7$ yields $+3$? Since the minuend is smaller than the subtrahend, the number must be negative. The answer or difference is -4 .

For type B, *think*, what number added to $+3$ yields $+7$? The minuend is larger than $+3$. Hence, the difference is $+4$.

Type C is a bit more difficult. *Think*, what number must be added to -3 to yield $+7$? Again the minuend is larger than the subtrahend; so the answer will be positive. But from -3 to $+7$ is 10 steps; therefore, the answer must be $+10$.

The only difference between Type C and Type D is that the answer is negative. *Think*, what number added to $+7$ yields -3 ? Since the minuend is smaller than the subtrahend, the answer must be negative. It is -10 .

For Type E, *think*, what number must be added to -7 to yield -3 ? Since -3 is larger than -7 , the answer must be positive. We know that $(-7) + (+4) = -3$; hence, the answer is $+4$.

Types E and F are related. *Think*, what number must be added to -3 to yield -7 ? Since -7 is smaller than -3 , the answer is negative. We know that $(-3) + (-4) = -7$; so the answer is -4 .

Better than a rule for subtracting two directed numbers is the principle on which subtraction is based. Of course, you can

make a rule if you wish, but be sure that first your child understands the basis for the rule.

Let us see if addition of directed numbers is such that the commutative law holds:

$$\begin{aligned} \text{and} \quad (+3) + (+2) &= +5 \\ (+2) + (+3) &= +5 \end{aligned}$$

$$\begin{aligned} \text{and} \quad (-3) + (+4) &= +1 \\ (+4) + (-3) &= +1 \end{aligned}$$

$$\begin{aligned} \text{and} \quad (-2) + (-5) &= -7 \\ (-5) + (-2) &= -7 \end{aligned}$$

These examples indicate that the commutative law does indeed hold for addition of directed numbers.

What about the associative law? Let us see:

$$[(+3) + (-2)] + (-3) = (+1) + (-3) = -2$$

and

$$(+3) + [(-2) + (-3)] = (+3) + (-5) = -2$$

Another example:

$$[(-5) + (+7)] + (+3) = (+2) + (+3) = +5$$

and

$$(-5) + [(+7) + (+3)] = (-5) + (+10) = +5$$

The examples indicate that the associative law, too, applies in the case of addition of directed numbers. This is what we wanted.

At some point in your child's work in algebra, his teacher will point out that the positive numbers behave exactly in the same fashion as the whole numbers in arithmetic. The agreement is made to use $+12$ or 12 , say, interchangeably. If the agreement is not made, a ninth grader might be puzzled at sometimes seeing a $+12$ as an answer and sometimes just 12 . You must be sure that your child understands that directed numbers include the old, familiar numbers of arithmetic.

If positive numbers are to behave like the numbers of arithmetic, then we have:

$$\begin{aligned} (+4)(+11) &= 4 \cdot 11 = 44 \text{ or } +44 \\ (+44) \div (+11) &= 44 \div 11 = 4 \text{ or } +4 \end{aligned}$$

It seems reasonable to expect that the product will be positive in the case when both numbers are negative:

$$\begin{aligned} (-4)(-11) &= +44 \\ (-44) \div (-11) &= +4 \end{aligned}$$

In general, if the signs of two numbers that are being multiplied are alike, then the product is positive. If two numbers with like signs are divided, the quotient is positive.

Next, we must consider the case of multiplication or division of two numbers with unlike signs. As you might guess, the answer is negative. Look at the examples:

$$(-4)(+11) = -44$$

and

$$(+4)(-11) = -44$$

for division,

$$(-44) \div (+11) = -4$$

and

$$(+44) \div (-11) = -4$$

If two numbers with unlike signs are multiplied or divided, the answer is negative.

A few examples are sufficient to convince a youngster that the commutative, associative, and distributive laws apply. Look at the examples:

$$\begin{aligned} \text{a.} \quad (+3)(-5) &= -15 \\ (-5)(+3) &= -15 \end{aligned}$$

$$\begin{aligned} \text{b.} \quad [(+3)(-5)](-2) &= (-15)(-2) \\ &= +30 \\ (+3)[(-5)(-2)] &= (+3)(+10) \\ &= +30 \end{aligned}$$

$$\begin{aligned} \text{c.} \quad 3[(-5) + (-4)] &= 3(-5) + 3(-4) \\ 3(-9) &= (-15) + (-12) \\ -27 &= -27 \end{aligned}$$

After much practice with directed numbers in addition, subtraction, multiplication, and division, the next step is to apply the ideas when letters are used.

Operations on Polynomials

An example of a *polynomial* is:

$$9x^3 - \frac{3}{4}x^2y + 4xy^2 + 7y^3 - 13$$

A polynomial is an expression in which numbers and letters appear. The letters have positive whole numbers attached to them that indicate how many times they

are to be used in a product. For example,

$$x^3 \text{ means } x \cdot x \cdot x$$

and

$$x^2y \text{ means } x \cdot x \cdot y$$

The terms in a polynomial are separated by "+" and "-" signs.

You might say that a polynomial is an expression consisting of several terms.

Then a *trinomial* is a polynomial with three terms,

$$2x^2 - 5x + 10$$

A *binomial* is a polynomial with two terms,

$$3x + 4y$$

A *monomial* is a single term,

$$4x$$

The distributive law,

$$a(b + c) = ab + ac$$

will help us add two monomials. Consider,

$$(-3a) + 12a$$

by the distributive law, we have

$$(-3a) + 12a = [(-3) + 12]a = 9a$$

Another example is

$$(-4b^2) + (-13b^2) = [(-4) + (-13)]b^2 = -17b^2$$

Other examples are:

$$4a^2 + 2a^2 = 6a^2$$

$$4k - 12k = -8k$$

$$(-12x) - (-9x) = -3x$$

In the case of multiplication or division, observe the examples:

$$2x(-3a) = -6ax$$

$$4a \times 2 = 8a$$

$$12a \div (-4) = -3a$$

$$(-15a^3) \div (-3) = 5a^3$$

If the basic ideas are gone over carefully with your youngster, he should have no difficulty working with examples like the foregoing.

With the work on operations with monomials behind him, an algebra student has little difficulty working with polynomials. The reason is that all of the work goes back to operations with monomials, the terms of the polynomials.

For example,

$$\begin{array}{r} 4x^2 + 2x - 5 \\ (+) 2x^2 + 3x + 6 \\ \hline 6x^2 + 5x + 1 \end{array}$$

Notice that the addition is done column by column. Each column involves finding the sum of two monomials.

Subtraction, too, can be done easily because of the work with monomials:

$$\begin{array}{r} 4y^2 - 3y + 5 \\ (-) 2y^2 - 2y + 6 \\ \hline 2y^2 - y - 1 \end{array}$$

The difference can be checked by adding it to the subtrahend to see if you get the minuend.

First, we consider multiplication of a single term, a monomial, and several terms, a polynomial. Look at the rectangle below, which has a width of a , and a length of $x + y + 2$.

a	ax	ay	$2a$
	x	y	2

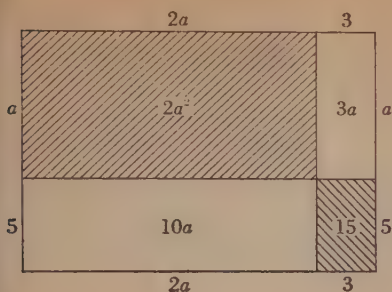
The areas of the small rectangles into which the large rectangle is divided are ax , ay , and $2a$. Using the same formula for area of a rectangle, length times width, and applying it to the large rectangle, we find its area is $a(x + y + 2)$. Yet, the area of the large rectangle equals the sum of the areas of the rectangles into which it has been divided; hence,

$$a(x + y + 2) = ax + ay + 2a$$

So, to multiply a polynomial by a monomial, multiply each term of the polynomial by the monomial.

$$4x(x - 2y - 3) = 4x^2 - 8xy - 12x$$

Second, consider the multiplication of two binomials. The rectangle below has a width



of $a + 5$ and a length of $2a + 3$. As in the foregoing illustration, the area of the big rectangle equals the sum of the areas of the small rectangles into which it is divided. The sum of the areas of the small rectangles is

$$2a^2 + 10a + 3a + 15 \text{ or } 2a^2 + 13a + 15$$

The area of the big rectangle is

$$(2a + 3)(a + 5)$$

and it must equal the sum of the areas of the small rectangles. Hence,

$$(2a + 3)(a + 5) = 2a^2 + 13a + 15$$

Multiplication is easy if the work is arranged like a long multiplication example in arithmetic:

$$\begin{array}{r} 2a + 3 \\ (\times) a + 5 \\ \hline 10a + 15 \\ 2a^2 + 3a \\ \hline 2a^2 + 13a + 15 \end{array}$$

The form for division bears a close resemblance to long division in arithmetic. If you did the example

$$(4x^2 + 4x - 3) \div (2x + 3)$$

you would most likely write:

$$\begin{array}{r} \text{di-} \quad \quad \quad 2x - 1 \quad \leftarrow \text{quotient} \\ \text{visor} \rightarrow 2x + 3 \overline{) 4x^2 + 4x - 3} \leftarrow \text{dividend} \\ \quad \quad \quad 4x^2 + 6x \\ \quad \quad \quad \hline \quad \quad \quad - 2x - 3 \\ \quad \quad \quad - 2x - 3 \\ \quad \quad \quad \hline \end{array}$$

First, *think*, what is $4x^2$ divided by $2x$. It is $2x$. Then multiply:

$$(2x + 3)2x = 4x^2 + 6x$$

Now, the product is subtracted from the dividend:

$$(4x^2 + 4x - 3) - (4x^2 + 6x) = -2x - 3$$

In the next step, $-2x - 3$ is used as a new dividend. *Think*, what is $-2x$ divided by $2x$? It is -1 , and -1 becomes the next term of the quotient. Then multiply:

$$(2x + 3)(-1) = -2x - 3$$

The product is subtracted from the new dividend; the division is finished, for the remainder is zero.

Of course, all divisions will not come out "even." But you will know when to stop because the remainder will be a number:

$$\begin{array}{r} 5x - 6 \\ 3x + 2 \overline{) 15x^2 - 8x + 13} \\ \quad \quad \quad 15x^2 + 10x \\ \quad \quad \quad \hline \quad \quad \quad - 18x + 13 \\ \quad \quad \quad - 18x - 12 \\ \quad \quad \quad \hline \quad \quad \quad + 25 \leftarrow \text{remainder} \end{array}$$

Factoring

When you studied algebra, you may have spent much time on the topic of special products and factoring. Probably you studied many involved types of factoring and practiced on endless lists of exercises. Nowadays you will find your child studying just three types of multiplication and their corresponding three types of factoring. The

names of the types and an illustrative example for each follow:

(a) Common Monomial:

$$ax + ay + a = a(x + y + 1)$$

(b) Difference of Two Squares:

$$x^2 - y^2 = (x + y)(x - y)$$

(c) Trinomial:

$$x^2 - x - 6 = (x - 3)(x + 2)$$

Factoring is related to multiplication. Two numbers are factors of a third number if their product equals the third number. For example 5 and 3 are factors of 15, because $15 = 3 \cdot 5$. For algebra, we say two expressions are factors of a third expression if their product equals the third expression. The three examples above are illustrations.

Let us consider each of the types in turn. Study the product:

$$3x(4x + 3y + 9) = 12x^2 + 9xy + 27x$$

Notice that $3x$ is a part of each term of the right member; $3x$ is common to every term. That means it is a factor of every term. You can recognize an example that is a common monomial factoring type by looking to see if the given expression has something common to every term. For example,

$$15xyz + 5xy^2 - 40xyz^2$$

has the monomial $5xy$ common to every term. One factor is $5xy$; the other factor is obtained by *thinking*, by what must I multiply $5xy$ to yield $15xyz$? to yield $5xy^2$? to yield $-40xyz^2$? Then the factored expression is

$$5xy(3z + y - 8z^2)$$

The difference of two squares as a factoring type is easy to recognize because there are always (a) just two terms, (b) each term is a perfect square, and (c) there is a minus sign between the terms. The factors are the sum of the square roots of the terms and the difference of their square roots. For example,

$$9x^2 - 49y^2 = (3x + 7y)(3x - 7y)$$

That the product is indeed the difference of two squares can be verified by multiplication. Let us check, as in the example below, where we multiply first by $3x$ and second by $-7y$. Like terms fall under one another nicely if you multiply from left to right. You can see that the product is the

given expression. We factored correctly.

$$3x + 7y$$

$$3x - 7y$$

$$9x^2 + 21xy$$

$$- 21xy - 49y^2$$

$$9x^2$$

$$- 49y^2$$

In case your boy or girl has trouble factoring a trinomial, check to see if he understands that it is the product of two binomials. For example, the product of $(x + 2)$ and $(x + 1)$, as shown in the adjacent multiplication, is $x^2 + 3x + 2$. Just as soon as he realizes this, he knows that he must look for two binomials as factors of a trinomial. About all you can tell your child to help him to recognize a trinomial type of factoring is that there are always three terms, and there is no expression common to the terms. As an example, let us factor the trinomial

$$x + 2$$

$$x + 1$$

$$x^2 + 2x$$

$$+ x + 2$$

$$x^2 + 3x + 2$$

$$4x^2 + 4xy - 3y^2 = (2x + 3y)(2x - y)$$

Outside
 Inside

First, write the factors of the *end* terms in their proper position in the parentheses in the right member; the factors of $4x^2$ are $2x$ and $2x$ or $4x$ and x ; the factors of $3y^2$ are $3y$ and y . Now, you must place the "+" and the "-" so as to obtain the correct middle term, $4xy$. The middle term is always the sum of two products, the product of the "inside" terms and the product of the "outside" terms.

Notice that there is a choice of factors for the first term in the foregoing example. Such is often the case. The task, then, is to choose a pair of factors, making a mental check to see if the correct middle term is obtained, and accept or reject the choice of factors on the basis of your check.

Solving Equations

Your ninth grader will, perhaps, have had some instruction in the solution of equations toward the last part of the eighth grade. In algebra, more involved types of equations are solved. After directed numbers have been studied, solutions may be positive or negative and subtraction in an equation will always be possible.

The solution of an equation is a number that, replacing the letter in the equation, makes the left member equal the right member. Some of the first types of equations, together with their solutions, appear below:

$$\begin{array}{rcl} \text{(a)} & x + 5 = 2 & \\ & - 5 = -5 & \\ \hline & x = -3 & \end{array}$$

$$\begin{array}{rcl} \text{(b)} & x - 6 = 8 & \\ & + 6 = +6 & \\ \hline & x = 14 & \end{array}$$

$$\begin{array}{rcl} \text{(c)} & \frac{x}{2} = 5 & \\ & 2 \cdot \frac{x}{2} = 2 \cdot 5 & \\ & x = 10 & \end{array}$$

$$\begin{array}{rcl} \text{(d)} & 3x = -7 & \\ & \frac{3x}{3} = \frac{-7}{3} & \\ & x = -2\frac{1}{3} & \end{array}$$

Solving equations is not difficult if the emphasis is put on thinking what to do rather than on following a rule for solving that type of equation. Practice, of course, helps a child to perfect his methods. More involved equations are obtained by combin-

ing the types (a) to (d). For example, consider the following equation:

$$\begin{array}{rcl} 3x - 5 & = & 5x + 7 \\ - 7 & = & -7 \\ \hline 3x - 12 & = & 5x \\ -3x & = & -3x \\ \hline -12 & = & 2x \\ \frac{-12}{2} & = & \frac{2x}{2} \\ -6 & = & x \end{array}$$

Check: -6

Left member

$$3(-6) - 5 = -18 - 5 = -23$$

Right member

$$\begin{array}{l} 5(-6) + 7 = -30 + 7 = -23 \\ -23 = -23 \end{array}$$

This example illustrates a systematic way to solve the equation: (a) since 7 is added to the right member, to remove it we must subtract 7 from both members; (b) the result is $3x - 12 = 5x$. To remove the $3x$ from the left member, we must subtract $3x$ from both members; (c) the result is $-12 = 2x$. Now, we have a basic type of equation to solve; divide both members by 2, since we have $2x$ and want to find x . The final result is $-6 = x$. (d) The last equation is so simple that at a glance you can see that replacing x by -6 leads to the left member being equal to the right member. The check is done to see that -6 is indeed a number that makes the left member equal to the right member in the given equation.

Graphs

If your child is like other ninth grade students, he will find the work with graphs more enjoyable than some other topics in algebra. A graph is a picture; it is an aid to visualization of a relationship. By examining a picture, a graph, of a mathematical relationship more facts can be observed than from its verbal description, or its form in symbols, alone.

Suppose we have the problem: Find two numbers whose sum is 5. Is there just one pair of such numbers? Let us see. The first

number could be 3; then the second number would have to be 2 if we are to have their sum equal 5. But the first number could be 1; then the second number would be 4. So we see that there are many pairs of numbers whose sum is 5.

A few of the pairs of numbers are arranged in the table. We represent the first number by x , and the second number by y . Then the problem "two numbers whose sum is 5" is represented by

$$x + y = 5.$$

Point	A	B	C	D	E	F	G	H	I	J
If $x =$	-3	-2	-1	0	1	2	3	$3\frac{1}{2}$	4	5
Then $y =$	8	7	6	5	4	3	2	$1\frac{1}{2}$	1	0

Each of the pairs is given a letter name, too, as shown above.

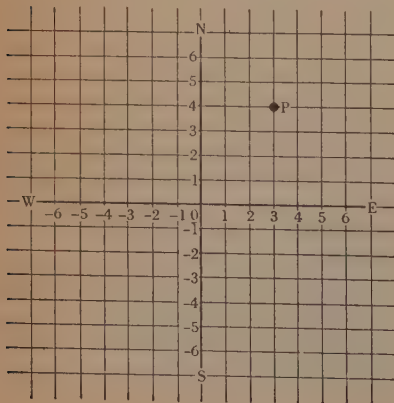
Now, we want to make a picture, a graph. In a city that is laid out in squares, avenues running north and south, streets from east to west, you can give directions by saying 3 streets east and 4 avenues north. Such directions allow you to go from where you are to the place in which to look for the spot you wish to find. We can use the same plan in mathematics.

Use two number scales. Place one vertically and the other horizontally; let the two number scales cross at their zero points. Special paper, with grid lines, is helpful; it is graph paper.

Then "3 streets east and 4 avenues north" will be the point on the grid labeled "P." Any other set of directions can be found in the same way. In mathematics such a set of directions as "3 streets east and 4 avenues north" is called an *ordered pair* of numbers. Such an ordered pair is written in parentheses; the first number

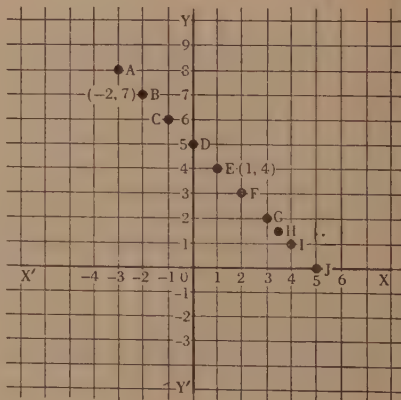
(3, 4)

is understood to represent the east-west direction; the second number is understood to represent the north-south direction.



In the table we have used x and y to represent our two numbers rather than east-west and north-south. Customarily the horizontal line is called the x -axis; the vertical line is called the y -axis.

Then an ordered pair of numbers, like $(-2, 7)$ in the table, has for its picture on graph point B, where B is -2 units to the left from 0 and 7 units up from 0. The other ordered pairs are plotted in the same way and have points for their graphs.



You see that point E corresponds to the pair (1, 4) and H corresponds to the pair $(3\frac{1}{2}, 1\frac{1}{2})$. Conversely, you can read the pair of numbers that correspond to a point. For example, the pair (5, 0) corresponds to point J; (2, 3) corresponds to the point F.

If you lay a ruler or the edge of a piece of paper along the points in the graph, you will see that they lie on a straight line. It turns out that the graph of every equation like

$$x + y = 5$$

the equation for our problem, serves to form a set of ordered pairs of numbers whose graph is a straight line.

We can use letters to form

$$ax + by = c$$

Here x and y are variables; a , b , and c are symbols for numbers. Every equation of this form has a straight line for a graph; and every straight line graph has an equation of this form. That is the reason that $ax + by = c$ is called a *linear equation*. The only limitation is that a and b cannot both be zero in the same equation.

For example, in the equation

$$3x - 4y = 2$$

$a = 3$, $b = -4$, $c = 2$. Let us form the graph of this equation. First, we must obtain a *table of values*; these are the ordered pairs we need in order to make the graph.

Since x and y are variables that can be replaced by any numbers, we choose a number at random as a value for one of the letters. Then we find the value of the other number from the equation. Suppose we choose the value 1 for y . If we replace y in the equation by 1, we have

$$\begin{aligned} 3x - 4 \cdot 1 &= 2 \\ 3x - 4 &= 2 \\ 3x &= 6 \\ x &= 2 \end{aligned}$$

The ordered pair is (2, 1). Remember, the *x-value* is always written *first* in the ordered pair.

Suppose we choose 3 for y . Then we get

$$\begin{aligned} 3x - 4 \cdot 3 &= 2 \\ 3x - 12 &= 2 \\ 3x &= 14 \\ x &= 1\frac{2}{3} \text{ or } 1\frac{2}{3} \end{aligned}$$

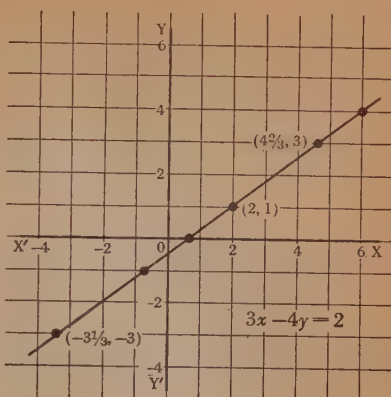
The ordered pair is ($1\frac{2}{3}$, 3).

The table of ordered pairs below was obtained by this method.

$x =$	$-3\frac{1}{3}$	$-2\frac{2}{3}$	$\frac{2}{3}$	2	$4\frac{2}{3}$	6
then $y =$	-3	-1	0	1	3	4

The graph (upper right column) is obtained by finding the point corresponding to each ordered pair in the table. After the points are plotted on the grid, a straight line is drawn through them.

Since two points of a line are enough to determine its position, you do not have to use as many number pairs as we did to sketch the graph. The two easiest points to obtain are those corresponding to the number pair in which x is 0 and to the number pair in which y is 0.



Consider the linear equation

$$y - 2x = -4$$

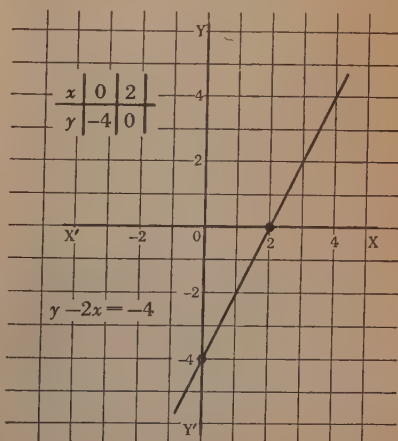
When x is 0, it is clear the term containing x is blotted out; then y is -4 . The number pair is (0, -4). The -4 is the *y-intercept* of the graph. It is the distance from 0 to the point where the graph crosses the *y-axis*.

When y is 0 in the above equation, blot out the term containing y . Then

$$\begin{aligned} -2x &= -4 \\ x &= 2 \end{aligned}$$

The number pair is (2, 0). The 2 is the *x-intercept* of the graph. It is the distance from 0 to the point where the graph crosses the *x-axis*.

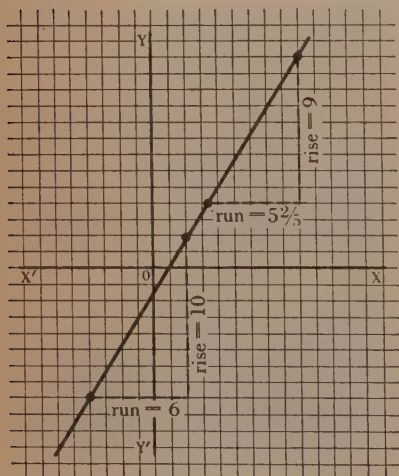
These number pairs appear in the table of values that accompanies the graph below.



Notice that the **y-intercept** is negative, because the graph crosses the **y-axis** below 0. On the other hand, the **x-intercept** is positive, because the graph crosses the **x-axis** to the right of 0. When you use the two number pairs, one in which $x = 0$ and the other in which $y = 0$, to determine the graph, we say you are *graphing by intercepts*.

We have two examples of straight line graphs now, first the graph of $3x - 4y = 2$ and second the graph of $y - 2x = -4$. As you look at these two examples, observe that (a) the second graph is steeper than the first graph and (b) as your eye follows along the graphs from left to right they slant upward. If the graphs were outlines of hills, you would say the second hill had a steeper slope, or a greater slope, than the first. We use the same word, *slope*, in mathematics to describe the steepness of a graph. But in mathematics we go further; we try to get a numerical measure of this slope so that we can compare, by numbers, the slopes of two graphs.

Draw any straight line graph on a grid.



You notice there are no abrupt changes in the slant of the graph; in fact, the slant or the steepness or the slope is everywhere the same. This observation furnishes the key to a definition of slope. Choose any two points on the straight line. At the points draw one dashed line parallel to the **y-axis** and another dashed line parallel to the **x-axis** so that the two dashed lines intersect or cross

one another. Then, slope is defined as follows:

$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

We can get a numerical measure of the slope for our example by counting the number of squares in the run and the number of squares in the rise. The run = 6 squares; the rise = 10 squares. Thus,

$$\text{slope} = \frac{10}{6} \quad \text{or} \quad \frac{5}{3}$$

For the second pair of points, run = 5 and rise = 9 squares; therefore

$$\text{slope} = \frac{9}{5} \quad \text{or} \quad 9 \cdot \frac{5}{27} = \frac{5}{3}$$

Notice that the two slopes are $\frac{5}{3}$, just as we expected.

If the line we had drawn slanted downward as our eye moved from left to right instead of slanting upward as in the example, then we would have said the line has *negative slope*. In the example, the line has *positive slope*, because it slants upward as the eye moves from left to right. Historically, for reasons that are not clear, slope always denoted by the letter **m**. So we write

$$m = \frac{\text{rise}}{\text{run}}$$

and understand that **m** always represents the slope.

Let us apply the idea of slope to an equation,

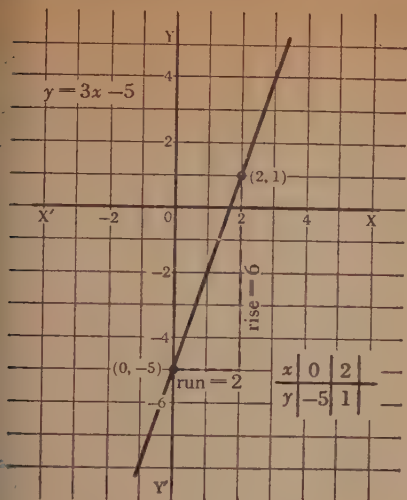
$$y = 3x - 5$$

To make a graph, we first need a table of values. When $x = 0$, we have $y = -5$. The one ordered pair is $(0, -5)$. Another pair of numbers is obtained by replacing x by

$$\begin{aligned} y &= 3 \cdot 2 - 5 \\ y &= 6 - 5 \\ y &= 1 \end{aligned}$$

The ordered pair is $(2, 1)$. The graph appears on page 147, left column.

Earlier (page 143) we said that a graph was a visual aid. We used the graph in this way to find a way to define slope so that we could describe the steepness of a line precisely, by means of a number. We shall use the graph in this way again. The graph furnishes a picture of the relationship expressed by the equation. All further relationships are contained in the equation, but so abstractly that we need the picture, the



graph, to tell us what to look for.

We are studying the equation,

$$y = 3x - 5$$

and its graph. First, let us find the slope of the line. Slope is rise over run between *any* two points on the graph. Hence, we are not prohibited from choosing the points *conveniently*. We pick two points so that we get an exact number of squares for both the run and the rise. Then, on the graph,

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{6}{2} = 3$$

Now, the number that multiplies x in the equation is 3, too. There is a relationship between this number and the slope:

Whenever a linear equation is in the form y equals something, the number that multiplies x is the slope.

We notice from the graph that the **y-intercept** is -5 . In the equation, the number that stands all by itself is -5 . Again, an observation can be made:

Whenever a linear equation is in the form y equals something, the number that stands by itself equals the **y-intercept**.

But, suppose our linear equation is like

$$3x - 2y = 7$$

What can we do to find the **slope** and the **y-intercept**? We can try to rework the equation so that y is all by itself on one side of the equal sign. First, we subtract $3x$ from both members,

$$-2y = 7 - 3x$$

or, interchanging the two terms in the right member,

$$-2y = -3x + 7$$

Then, we divide both members of the equation by -2 , remembering to apply our rule of signs for dividing directed numbers,

$$\frac{-2y}{-2} = \frac{-3x}{-2} + \frac{7}{-2}$$

$$y = \frac{3x}{2} - \frac{7}{2}$$

So, the equation is in the form y equals something. Thus, we know

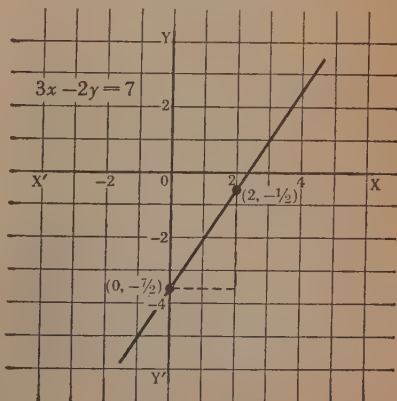
$$\text{slope} = m = \frac{3}{2}$$

and

$$y\text{-intercept} = -\frac{7}{2}$$

Why are we anxious to obtain the **slope** and the **y-intercept**? Because the information furnishes us with a quick way to sketch the graph of the linear equation. The **y-intercept** gives us one ordered pair immediately; it is $(0, -\frac{7}{2})$, since x is 0 on the y -axis.

The slope is $\frac{3}{2}$. It is positive; so the line slants upward to the right. We can take the run to be 2 units to the right from $(0, -\frac{7}{2})$, and the corresponding rise 3 units up. Thus, we arrive at another point on the graph; its corresponding ordered pair of numbers is $(2, -\frac{1}{2})$. A straight line drawn through the two points completes the graph.



Systems of Equations

Graphs can be used to find the solutions of a system of two equations in two unknowns, provided a solution exists. Whenever we have two linear equations, like

$$\begin{aligned} 3x + 4y &= 12 \\ 2x - y &= 8 \end{aligned}$$

for which we wish to find the number pair (x, y) that is a solution of both equations, we say we have a system of two equations in two unknowns to solve.

Such a system could arise in solving a problem like the following:

The sum of two numbers is 8, but the larger number is 3 times the smaller. Find the two numbers.

First, translate the problem stated in words into mathematical symbols.

Let x denote the smaller number.
Let y denote the larger number.

Then, "the sum of two numbers is 8" becomes " $x + y = 8$."

"The larger number is 3 times the smaller" becomes " $y = 3x$."

The system of two equations in two unknowns for our problem is:

$$\begin{aligned} x + y &= 8 \\ y &= 3x \end{aligned}$$

The next step is to draw the graphs of the equations on the same grid. To do so, we need a table of values for each equation. Let us use the intercept method.

In the first equation, $x + y = 8$, replace x by 0; then $y = 8$. The ordered pair is $(0, 8)$. Now, replace y by 0; then $x = 8$. The ordered pair is $(8, 0)$.

When x is replaced by 0 in the second equation, $y = 3x$, it turns out that y is 0 also, giving the ordered pair $(0, 0)$. We must modify our procedure for graphing by intercepts, for we need two different points to determine the graph of the equation. Let us replace x by 1; then $y = 3$. The ordered pair is $(1, 3)$.

The graphs, with the accompanying tables appear opposite.

All the pairs of values of x and y that satisfy $x + y = 8$ lie on its straight line graph.

All the pairs of values of x and y that satisfy $y = 3x$, lie on its straight line graph.

Therefore, the pair of values of x and y that satisfy both equations must belong to

the point of intersection of the two straight lines.

From the graph, we read the numbers corresponding to this point. The numbers are: 2 for x and 6 for y . Hence, the smaller number is 2; the larger number is 6.

Clearly, their sum is 8, and the larger is 3 times the smaller, checking with the conditions laid down in the statement of the problem. Since two straight lines intersect in one and only one point, we can be sure that there is just one number pair that is a solution for the system of equations.

If the two graphs had crossed at a point whose corresponding number pair involve fractions, reading these fractions correctly from the graph would be almost impossible. We must look for a way to solve a system of equations, then, that does not depend upon graphs. We look for analytic methods.

These methods have the effect of transforming the set of two equations with two unknowns into one equation with one unknown—and we know how to handle the latter.

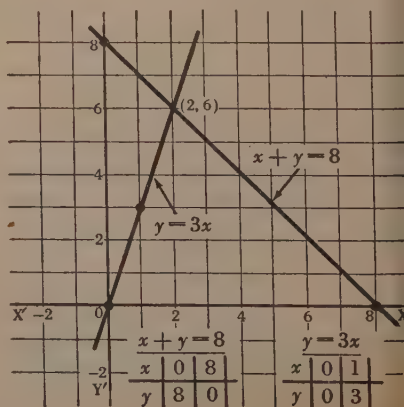
One analytic method used is the method of substitution. Consider the system:

$$\begin{aligned} x + y &= 8 \\ x - y &= 4 \end{aligned}$$

If we could express one of the unknowns, say x , in terms of y and numbers, then we could use this expression as a substitute for x .

Regard the second equation of the system. Clearly, by adding y to both members we obtain

$$x = 4 + y$$



Now, substitute $4 + y$ for x in the first equation of the system:

$$(4 + y) + y = 8$$

All we need to do now is to solve the above equation for the value of y . We have succeeded in transforming our system of two equations with two unknowns into a single equation with one unknown.

We proceed to solve for y by removing parentheses:

$$\begin{array}{rcl} 4 + y + y & = & 8 \\ 4 + 2y & = & 8 \\ 4 & = & 4 \\ \hline 2y & = & 4 \\ \frac{2y}{2} & = & \frac{4}{2} \\ y & = & 2 \end{array}$$

To find the value of x corresponding to the above value of y replace y by 2 in either of the original equations. That is, if you take $x + y = 8$, you get

$$\begin{array}{rcl} x + 2 & = & 8 \\ 2 & = & 2 \\ \hline x & = & 6 \end{array}$$

The solution for the system of equations is the number pair (6, 2). That this number pair is indeed the solution is verified by putting 6 for x and 2 for y in each of the original equations.

Another procedure for solving a system of two equations with two unknowns is called *addition or subtraction*. As an example, to illustrate the method, consider the system:

$$\begin{array}{rcl} 2x - 5y & = & 18 \\ 3x + 2y & = & 8 \end{array}$$

Just as in the case of the substitution method, the plan is to transform the system of two equations with two unknowns into a single equation with one unknown. However, instead of expressing one unknown in terms of the other and substituting, we shall eliminate one of the unknowns between the

two equations by adding them or subtracting them.

Look at the two equations in the example. We can eliminate y between them by addition, but to do so the numbers multiplying y must be the same. Since it is permissible to multiply an equation by a non-zero number, we can make the multipliers of y in both equations the same if we multiply the first equation by 2 and the second by 5.

The work follows:

$$\begin{array}{rcl} 2(2x) - 2(5y) & = & 2(18) \\ 5(3x) + 5(2y) & = & 5(8) \\ \hline 4x - 10y & = & 36 \\ 15x + 10y & = & 40 \\ \hline 19x & = & 76 \\ \frac{19x}{19} & = & \frac{76}{19} \\ x & = & 4 \end{array}$$

To find the value of y , replace x by 4 in either one of the given equations; say the second:

$$\begin{array}{rcl} 3x + 2y & = & 8 \\ 3(4) + 2y & = & 8 \\ 12 + 2y & = & 8 \\ 12 & = & 8 - 2y \\ \hline 2y & = & -4 \\ \frac{2y}{2} & = & \frac{-4}{2} \\ y & = & -2 \end{array}$$

Hence, the number pair (4, -2) seems to be the solution. That it is the solution can be seen if you replace x by 4 and y by -2 in the left member of both of the given equations:

$$\begin{array}{rcl} 2(4) - 5(-2) & = & 8 + 10 \\ 3(4) + 2(-2) & = & 12 - 4 \end{array}$$

Since

$$\begin{array}{rcl} 8 + 10 & = & 18 \\ 12 - 4 & = & 8 \end{array}$$

and since 18 and 8 are the respective right members in the given equations, you can see that true statements result.

Quadratic Equations

The graphs of the equations we have examined so far have been straight lines. Some equations have curves for their graphs. For example, an equation like

$$y = x^2 - 2x - 8$$

has a curve, called a *parabola*, for its graph. This is a *quadratic equation*. It is called a quadratic equation because it contains an x^2 -term. The x^2 -term is of the second degree, since its exponent is 2.

To draw the graph of the quadratic equation, we need a table of ordered pairs, just as we did in the case of a linear equation. Since x may be replaced by any number, let us choose a convenient list, beginning with -3 . If -3 is put in place of x in the equation, we have

$$y = (-3)^2 - 2(-3) - 8$$

Remembering our rules for multiplying directed numbers, we obtain,

$$\begin{aligned} y &= 9 + 6 - 8 \\ y &= 7 \end{aligned}$$

Thus, one ordered pair whose corresponding point lies on the graph is $(-3, 7)$.

If x is replaced by 2 , for example, we have

$$\begin{aligned} y &= (2)^2 - 2(2) - 8 \\ y &= 4 - 4 - 8 \\ y &= -8 \end{aligned}$$

Another ordered pair, therefore, whose corresponding point lies on the graph is $(2, -8)$.

The table that we obtain by proceeding in the above way, along with the graph on the opposite table, is shown below.

Table for $y = x^2 - 2x - 8$

x	-3	-2	-1	0	1	2	3	4	5
y	7	0	-5	-8	-9	-8	-5	0	7

Observe that the graph crosses the x -axis in two points, instead of one point as in the case of a straight line graph. The number pairs corresponding to the two points are

$$(-2, 0) \text{ and } (4, 0)$$

It is appropriate to call these points the *zeros* of the quadratic equation, for y is 0 at each. Are the numbers -2 and 4 roots of

$$x^2 - 2x - 8 = 0?$$

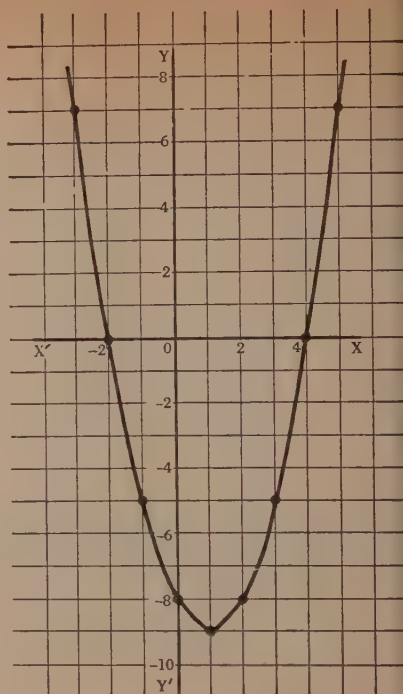
The above equation is obtained from our given equation by replacing y by 0 .

Let us see if -2 is a root. Replace x by -2 in the equation:

$$(-2)^2 - 2(-2) - 8 = 4 + 4 - 8 = 0$$

Yes, -2 is a root, since a true statement is obtained. Let us see if 4 is a root. Replace x by 4 in the equation:

$$(4)^2 - 2(4) - 8 = 16 - 8 - 8 = 0$$



Yes, 4 is a root. That is, a quadratic equation has two solutions. The solutions of

$$x^2 - 2x - 8 = 0$$

are -2 and 4 , as we have just seen. A linear equation, like

$$x - 3 = 7$$

has only one solution, in this case, 10 .

To summarize, a linear equation has one solution, a quadratic equation has two solutions. How many solutions do you think a cubic equation, like

$$x^3 - 4x^2 - 5x - 8 = 0$$

would have? It has three, but the methods for solving such an equation are beyond the scope of elementary algebra.

We verified by an example that a quadratic equation has two solutions. We assume in general, a quadratic equation

$$ax^2 + bx + c = 0$$

(where a is not zero; a , b , and c are numbers; and x is an unknown) has two solutions.

It is not necessary to use a graph to find the solutions of a quadratic equation. There are analytic methods that can be used.

Solution by factoring.

Another way to solve the quadratic equation,

$$x^2 - 2x - 8 = 0$$

is to observe that the left member is a trinomial type of factoring. If we factor the left member, we have

$$(x + 2)(x - 4) = 0.$$

Now, if the product of two numbers, or factors, is zero, at least one of the factors must be zero. In our case, this means

$$x + 2 = 0 \quad \text{or} \quad x - 4 = 0$$

The value of x that makes $x + 2 = 0$ is -2 .

The value of x that makes $x - 4 = 0$ is 4 .

To see that these values satisfy our equation, we use each in turn as a replacement for x .

First, consider -2 ; in

$$(x + 2)(x - 4)$$

replace x by -2 :

$$(-2 + 2)(-2 - 4) = (0)(-6) = 0,$$

since 0 times any number is 0 .

Second, consider 4 ; in

$$(x + 2)(x - 4)$$

replace x by 4 :

$$(4 + 2)(4 - 4) = (6)(0) = 0,$$

since any number times 0 is 0 .

Thus, the solutions of our quadratic equation are 4 and -2 .

Let us do another example. Find the solutions of

$$3x^2 - x = 4$$

In order to apply the method of solution by factoring, we must have a product of factors equal to zero. But we do not have one member zero in our equation. That does not need to stop us, though, because we can get zero in the right member if 4 is subtracted from both members of the equation. The result is

$$3x^2 - x - 4 = 0$$

Again, we recognize the left member as a trinomial type of factoring. So, we have

$$(3x - 4)(x + 1) = 0$$

Recall if a product of factors is zero at least one of the factors must be zero. Hence, we have

$$3x - 4 = 0 \quad \text{or} \quad x + 1 = 0$$

The value of x that makes $3x - 4 = 0$ is $\frac{4}{3}$.

The value of x that makes $x + 1 = 0$ is -1 .

To see that each of these values is a solution of our equation, replace x by each of the numbers.

First, replace x by $\frac{4}{3}$ in

$$(3x - 4)(x + 1)$$

then

$$\begin{aligned} \left[3\left(\frac{4}{3}\right) - 4 \right] \left[\frac{4}{3} + 1 \right] &= \left[4 - 4 \right] \left[\frac{7}{3} \right] \\ &= \left[0 \right] \left[\frac{7}{3} \right] \\ &= 0 \end{aligned}$$

Second, replace x by -1 in

$$(3x - 4)(x + 1)$$

then

$$\begin{aligned} [3(-1) - 4] [-1 + 1] &= [-3 - 4][0] \\ &= 0 \end{aligned}$$

Since the value of the left member equals the value of the right member in each case, it is indeed the case that $\frac{4}{3}$ and -1 are solutions of the given quadratic equation.

Solution by formula.

Not all quadratic equations can be solved by factoring because some do not have the form of a type of factoring taught in high school algebra. For instance,

$$2x^2 + 5x + 1 = 0$$

cannot be solved by factoring, because the left member does not have a monomial factor or a binomial factor of the type a high school algebra student knows.

When a situation like this arises, we use a formula to find the solutions. The formula,

giving the values of x , the unknown in the quadratic equation, is

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where the a , b , and c of the formula are the same as those shown in the quadratic equation,

$$ax^2 + bx + c = 0$$

Notice, the formula gives two solutions. One goes with the "+" sign and is

$$x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

The other goes with the "-" sign and is

$$x = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

We are ready to solve by the formula our example:

$$2x^2 + 5x + 1 = 0$$

By comparing this equation with the general form of a quadratic equation,

$$ax^2 + bx + c = 0$$

we see that

$$a = 2, b = 5, c = 1$$

Now, put these numbers in place of their corresponding letters in the formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-5 \pm \sqrt{5^2 - 4 \cdot 2 \cdot 1}}{2 \cdot 2}$$

$$x = \frac{-5 \pm \sqrt{25 - 8}}{4}$$

$$x = \frac{-5 \pm \sqrt{17}}{4}$$

We can find $\sqrt{17}$ by arithmetic or from a table of square roots. In a table, we will find

$$\sqrt{17} = 4.123$$

Now, we can find the values of x :

$$x = \frac{-5 \pm 4.123}{4}$$

That is,

$$x = \frac{-5 + 4.123}{4} \quad \text{or} \quad x = \frac{-5 - 4.123}{4}$$

$$x = \frac{-0.877}{4} \quad \text{or} \quad x = \frac{-9.123}{4}$$

$$x = -0.219 \quad \text{or} \quad x = -2.281$$

The solutions of our example, then, are -0.219 and -2.281 .

As a second example of use of the formula, we shall find the solutions of the quadratic equation

$$5x^2 + 6x - 8 = 0$$

First, we must put the equation in a form so that one member is zero. Subtract 8 from both members:

$$5x^2 + 6x - 8 = 0$$

Second, write what a , b , and c equal:

$$a = 5, b = 6, c = -8$$

Third, write the formula and replace a , b , and c in the formula by their values:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-6 \pm \sqrt{6^2 - (4)(5)(-8)}}{2 \cdot 5}$$

$$x = \frac{-6 \pm \sqrt{36 + 160}}{10}$$

$$x = \frac{-6 \pm \sqrt{196}}{10}$$

But $\sqrt{196} = 14$; putting 14 for $\sqrt{196}$ in the above equality, we get

$$x = \frac{-6 + 14}{10} \quad \text{or} \quad x = \frac{-6 - 14}{10}$$

$$x = \frac{8}{10} = \frac{4}{5} \quad \text{or} \quad x = \frac{-20}{10} = -2$$

So the solutions of the example are $\frac{4}{5}$ and -2 .

Up to this point your algebra student has

worked with at most squares and square roots. Can the work be extended to larger powers and roots different from squares? The answer is yes. Since the answer is yes,

we can make a "breakthrough" and study another topic in mathematics, a topic that has an interesting theory as well as interesting applications.

Exponents and Radicals

From earlier work in mathematics we know that

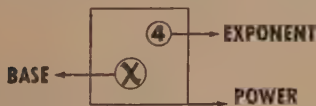
$$\begin{aligned}x^1 &= x \\x^2 &= x \cdot x\end{aligned}$$

and it seems reasonable to suppose that we can go on:

$$\begin{aligned}x^3 &= x \cdot x \cdot x \\x^4 &= x \cdot x \cdot x \cdot x\end{aligned}$$

as far as we like—so long as x is not zero and so long as the exponent is a positive whole number. But what about negative whole numbers? Can they be used as exponents? Can 0 be used as an exponent? Is it all right to use a fraction as an exponent? It is answers to these questions that we seek.

First, let us agree on the following words to describe what we shall be working with:



Then, 4 is the *exponent* of the power; x is the *base*; and the whole thing, x^4 , is described as the **fourth power of x** or a **fourth power**.

We already know that for a non-zero base x ,

$$x^n = \underbrace{x \cdot x \cdot x \cdot \dots \cdot x}_{n \text{ factors}}$$

where n is a positive whole number. That is, we know

$$x^6 = \underbrace{x \cdot x \cdot x \cdot x \cdot x \cdot x}_{6 \text{ factors}}$$

Now let us try to find the product of two powers of the same base. We should like to find

$$2^3 \cdot 2^4$$

$$2^3 = 2 \cdot 2 \cdot 2$$

and

$$2^4 = 2 \cdot 2 \cdot 2 \cdot 2$$

so

$$\begin{aligned}2^3 \cdot 2^4 &= (2 \cdot 2 \cdot 2)(2 \cdot 2 \cdot 2 \cdot 2) \\2^3 \cdot 2^4 &= 2^{3+4} = 2^7\end{aligned}$$

Consider another example:

$$\begin{aligned}y^5 \cdot y^4 &= (y \cdot y \cdot y \cdot y \cdot y)(y \cdot y \cdot y \cdot y) \\&= y^{5+4} = y^9\end{aligned}$$

These examples lead us to assert that the product of two powers of the same base is obtained by adding their exponents. In symbols, we write

$$x^m \cdot x^n = x^{m+n}$$

where x is not zero and m and n are positive whole numbers.

Just suppose the above law applied when $n = 0$.

Then we would have,

$$x^m \cdot x^0 = x^{m+0} = x^m$$

that is, we have

$$x^m \cdot x^0 = x^m$$

Think back to numbers. What special number, taken as a multiplier, leaves the product unchanged? This is characteristic of 1, for

$$x^m \cdot 1 = x^m$$

It looks as if we must conclude that

$$x^0 = 1$$

if powers are going to behave according to the rules for operating with numbers that we already know.

Thus, we are led to *define* a zero power as one. The zeroth power of any non-zero number is 1. For example, we write

$$\begin{aligned}y^0 &= 1 \\3^0 &= 1 \\(1,000,987)^0 &= 1 \\(1958)^0 &= 1\end{aligned}$$

We have found a way to express the product of two powers of the same base. Can a rule be developed for the quotient of two powers of the same base? And, if so, what is the rule?

Let us consider a few examples:

$$\frac{x^8}{x^2} = \frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot x}{\cancel{x} \cdot \cancel{x}} = x \cdot x \cdot x \cdot x \cdot x \cdot x$$

$$= x^{8-2} = x^6$$

$$\frac{x^7}{x^3} = \frac{\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot x \cdot x}{\cancel{x} \cdot \cancel{x} \cdot \cancel{x}} = x^{7-3} = x^4$$

$$\frac{y^2}{y^5} = \frac{y \cdot y}{y \cdot y \cdot y \cdot y \cdot y} = \frac{1}{y \cdot y \cdot y}$$

$$= \frac{1}{y^{5-2}} = \frac{1}{y^3}$$

We need two rules because we have two different kinds of answers. First,

$$x^m \div x^n = x^{m-n}$$

if x is not zero, m and n are positive whole numbers, and m is greater than n . Second,

$$x^m \div x^n = \frac{1}{x^{n-m}}$$

if x is not zero, m and n are positive whole numbers, and m is less than n (or n is greater than m).

Applications of the two rules are:

$$x^9 \div x^4 = x^{9-4} = x^5$$

$$w^4 \div w^7 = 1/w^{7-4} = 1/w^3$$

$$3^8 \div 3^5 = 3^{8-5} = 3^3$$

Does our definition of a zero power "fit in" with the rules we have just developed for quotients? Yes,

$$x^4 \div x^4 = x^{4-4} = x^0 = 1$$

and

$$\frac{x^4}{x^4} = 1$$

since a number divided by itself is 1. Just to be sure, let us look at another example:

$$(-2)^3 \div (-2)^3 = (-2)^{3-3} = (-2)^0$$

but

$$\frac{(-2)^3}{(-2)^3} = \frac{-8}{-8} = 1$$

so, we have

$$(-2)^3 \div (-2)^3 = (-2)^0 = 1$$

One of our examples above was

$$\frac{y^2}{y^5} = \frac{1}{y^{5-2}} = \frac{1}{y^3}$$

Now, suppose we forgot our second rule, or failed to observe that the exponent in the denominator was greater than the exponent in the numerator, and simply applied the first rule for quotients. Then, we should have

$$\frac{y^2}{y^5} = y^{2-5} = y^{-3}$$

Look at the two results:

$$\frac{1}{y^3} \text{ and } y^{-3}$$

In mathematics, we hate to have different answers for the same problem. We do not want to have $y^2 \div y^5$ sometimes to be y^{-3} and sometimes to be $1/y^3$. The way out of the difficulty is to say, *by definition*, the two shall be the same. That is,

$$y^{-3} = \frac{1}{y^3}$$

The same definition applies to any non-zero base:

$$x^{-n} = \frac{1}{x^n}$$

where n can be any directed number.

There remains the problem of fractional exponents. What meaning should be given to a power with a fractional exponent, like

$$x^{1/2}$$

The fractional exponent ought to have meaning such that

$$x^{1/2} \cdot x^{1/2} = x^{1/2+1/2} = x$$

On the other hand, from the work with square roots, we know that

$$\sqrt{x} \cdot \sqrt{x} = \sqrt{x^2} = x$$

These examples suggest that

$$x^{1/2} = \sqrt{x}$$

With the above meaning for a fractional exponent it can be shown that all the laws for exponents already developed apply also to fractional exponents. For example,

$$x^{1/2} \div x^{1/3} = x^{1/2-1/3} = x^{1/6}$$

$$x^{1/4} \cdot x^{1/2} = x^{3/4}$$

$$x^{1/8} \div x^{1/8} = x^{1/8-1/8} = x^0 = 1$$

In general, the definition of a fractional exponent is

$$x^{m/n} = \sqrt[n]{x^m}$$

Examples follow:

$$w^{2/3} = \sqrt[3]{w^2}$$

$$4^{3/2} = \sqrt{4^3} = \sqrt{64} = 8$$

Notice that the denominator of the fractional exponent indicates the root, and the numerator indicates the power.

The pay-off for the work on exponents and radicals appears for an algebra student in his work with *logarithms*. It is to them that we next turn.

Logarithms

A logarithm is an exponent. Thus, the work with exponents of powers and the work with logarithms are not totally unrelated. The same laws that have been developed for operations with powers carry over to operations with logarithms.

A logarithm is a new notation for an exponent of a power. The logarithm relates the base of the power to the exponent in a new way. Consider a power, and its value,

$$2^4 = 16$$

here 2^4 is the power; its value, or what we call the number, is 16; the base is 2; and the exponent is 4.

Now, when the above example is written in the notation of logarithms, we should expect the logarithm to equal the exponent, 4. The sentence stating the example in logarithmic form is:

logarithm of 16 to the base 2 equals 4

and the notation for the sentence is,

$$\log_2 16 = 4$$

There follow additional examples:

Exponential form:

$$2^3 = 8$$

Logarithmic form:

logarithm of 8 to the base 2 equals 3

$$\log_2 8 = 3$$

Exponential form:

$$10^2 = 100$$

Logarithmic form:

logarithm of 100 to the base 10 equals 2

$$\log_{10} 100 = 2$$

Other examples are arranged below in parallel columns.

Exponential Form

Logarithmic Form

$$9^{3/2} = 27$$

$$\log_9 27 = \frac{3}{2}$$

$$5^{-2} = \frac{1}{25}$$

$$\log_5 \frac{1}{25} = -2$$

$$6x = N$$

$$\log_6 N = x$$

$$10^{-2} = \frac{1}{100} = 0.01$$

$$\log_{10} 0.01 = -2$$

Logarithms were invented in order to simplify computations. They reduce multiplication to addition and division to subtraction. Let us see how this is done. But first we need a table of logarithms. The table is constructed in terms of a base: the adjoining table was made with a choice of base 3. The table was constructed from the connection between logarithms and exponents:

$\log_3 1 = 0$ since $3^0 = 1$	2,187	7
$\log_3 3 = 1$ since $3^1 = 3$	6,561	8
$\log_3 9 = 2$ since $3^2 = 9$	19,683	9
and so on.	59,049	10

and so on.

Now, suppose you wish to find the product:

$$N = 2187 \times 27$$

The numbers can be written as powers of 3 and their exponents added.

$$3^7 \times 3^3 = 3^{7+3} = 3^{10}$$

But another way to do the multiplication is to use the new logarithmic notation:

$$\begin{array}{rcl} \log_3 2187 & = & 7 \\ (+) \log_3 27 & = & 3 \\ \hline \log_3 N & = & 10 \\ N & = & 59,049 \end{array}$$

where the value of N is obtained from the table by looking in the "log N " column for 10 and reading its corresponding number. Of course, the logarithms are added since exponents are added in a product.

Consider the following example: Find

$$N = 19,683 \div 243$$

The numbers can be written as powers of 3 and their exponents subtracted:

$$\frac{3^9}{3^5} = 3^{9-5} = 3^4 = 81$$

But, we can also do the example by logarithms, subtracting the logarithms of the numbers, since the logarithms are the exponents:

$$\begin{array}{rcl} \log_3 19,683 & = & 9 \\ (-) \log_3 243 & = & 5 \\ \hline \log_3 N & = & 4 \\ N & = & 81 \end{array}$$

The foregoing procedure for introducing logarithms is followed by many textbooks. By the time an algebra student has worked through a few exercises, he begins to wonder. What would happen if the numbers chosen did not appear in the table?

Suppose you wanted to find

$$13 \times 782$$

What would you do? One answer is that you might extend the table; for example,

$\log_3 13$ would lie between 2 and 3

since

$$\log_3 9 = 2 \text{ and } \log_3 27 = 3$$

However, it turns out to be much simpler if you change to another base before beginning to consider an extended table. That base is 10; it is chosen because it is also the base of our decimal number system.

Any number can be expressed in the decimal number system as a multiple of a power of 10. For example,

$$\begin{array}{ll} 6.78 = 6.78 \times 10^0 & 0.678 = 6.78 \times 10^{-1} \\ 67.8 = 6.78 \times 10^1 & 0.0678 = 6.78 \times 10^{-2} \\ 678 = 6.78 \times 10^2 & 0.00678 = 6.78 \times 10^{-3} \\ 6780 = 6.78 \times 10^3 & 0.000678 = 6.78 \times 10^{-4} \end{array}$$

Notice in the examples that each numeral contains the same sequence of digits.

Each numeral is written as 6.78 times a power of 10. Now, we know that

$$\begin{aligned} \log 678 &= \log (6.78 \times 10^2) \\ &= \log 6.78 + \log 10^2 \\ &= \log 6.78 + 2 \end{aligned}$$

since

$$\log 10^2 = \log 100 = 2$$

when the base of the logarithm is 10 (custom dictates that the base is not written when it is 10).

Since all three-place numerals involve only the ten digits (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) of our number system, all that mathematicians had to do was construct tables for logarithms of numbers with sequences of digits between 1 and 999.

Notice that in our example,

$$\log 678 = 2 + \log 6.78$$

the logarithm consists of a whole number 2, and $\log 6.78$. Now, $\log 6.78$ is a positive decimal fraction. For, 6.78 lies between 1 and 10:

$$1 < 6.78 < 10$$

But $\log 1 = 0$ and $\log 10 = 1$; so

$$(0 = \log 1) < \log 6.78 < (\log 10 = 1)$$

Each logarithm to the base 10 can be written as a whole number plus a positive decimal fraction. Names are given to these two parts of a logarithm to the base 10:

Characteristic = whole number part (it is positive, negative, or zero)

Mantissa = positive decimal fraction part.

where $\log 3.856$ was found in a table of mantissas.

Example 2. Find $\log 0.00789$

First, express the number as the product of two numbers, one a power of 10:

$$0.00789 = 7.89 \times 10^{-3}$$

Second, find the logarithm:

$$\begin{aligned}\log 0.00789 &= \log (7.89 \times 10^{-3}) \\ &= \log 7.89 + \log 10^{-3} \\ &= \log 7.89 - 3 \\ &= 0.8971 - 3\end{aligned}$$

since $\log 10^{-3} = -3$ and in a table of mantissas we found $\log 7.89 = 0.8971$.

Example 1. Find $\log 385.6$

First, express the number as the product of two numbers, one a power of 10:

$$385.6 = 3.856 \times 10^2$$

Then, find the logarithm:

$$\begin{aligned}\log 385.6 &= \log (3.856 \times 10^2) \\ &= \log 3.856 + \log 10^2 \\ &= \log 3.856 + 2 \\ &= 0.5862 + 2 \\ &= 2.5862\end{aligned}$$

Summary

There are many topics in high school mathematics that have been only mentioned here. But those are topics that are presented clearly in textbooks. If your son or daughter has trouble with such a topic—like series or trigonometry—go over his textbook explanation with him.

Sometimes an upper division student is helped most if he has a chance to talk over his problem with someone. The act of putting into words the difficulty clarifies it. Then you, as parent, will not be called upon to explain the mathematics!

With the introductory material and the first ideas behind him, your son or daughter builds a mathematical structure by adding definitions, leading to more operations. There is no end to what can be done, because mathematics represents a rapidly growing and expanding body of knowledge. So far as high school mathematics is con-

cerned, you as a parent are most effective if you can help your teen-ager to get a good start. Helping him over the first hurdles, teaching him correct ideas as reviewed here, and putting him on his own thereafter is good advice to follow. Remember that information concerning mathematics can be obtained, also, from your child's textbook. Help him to learn to help himself through careful reading and asking questions.

Of course, you may be interested in mathematics as a hobby or because of a need in your work. Then, for you there exist today many excellent books on mathematics. Some are intended to inform the general public concerning the advances in mathematics. Others are written for people who find a knowledge of mathematics necessary for advancement in their fields. You have a large number of publications from which to make your choices.

For any reader that does not have a copy of the 1957 edition of the *INFORMATION PLEASE ALMANAC*, which included the first part of *Relearning Mathematics*, we have made arrangements to supply a reprint of it—consisting of 24 pages.

You can obtain a copy by sending your order with 25¢ to *INFORMATION PLEASE ALMANAC*, 444 Madison Avenue, New York 22, New York.

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CELEBRITIES' OWN FAVORITE RECIPES

Reprinted by Courtesy of Good Housekeeping



James Cagney
Actor

Apple-Cheese Pie

About 7 cups	¾ teaspoon nut-
pared, sliced	meg
cooking apples	1 pkg. pie crust
(3 to 4 lbs.)	mix
½ cup granulated	½ lb. packaged
sugar	process cheese
½ cup brown	food or spread,
sugar, packed	sliced
3 tablespoons	2 tablespoons
flour	butter or mar-
¾ teaspoon cin-	garine
namon	

In large bowl toss together apples, sugar, brown sugar, flour, cinnamon and nutmeg. Start heating oven to 425° F. Make up pie crust mix as label directs. On lightly floured surface, roll out half of pastry into 12" circle. Place in 9" pie plate. Fill with half of apple mixture, top with cheese, then add the rest of apples. Dot with shortening. Roll out rest of pastry into 14" circle and place over apples. Cut slits in pastry. Fold edges of top crust under bottom crust. Press to seal, and flute edge. Bake pie 40 minutes or until done. Serve warm.

Lowell Thomas
News Commentator

Tomato Foogath

3 tablespoons	very thinly
butter or mar-	sliced
garine	¾ teaspoon
1 medium onion,	ginger
thinly sliced	4 large tomatoes,
1 pickled hot	skinned and
pepper, very	diced
thinly sliced	2 tablespoons
(optional)	grated coconut
2 cloves garlic,	1½ teaspoons salt

Put shortening in skillet and sauté the

onion, pepper, garlic and ginger until vegetables are tender. Stir in tomatoes, coconut and salt, and simmer, uncovered, stirring occasionally until liquid is nearly evaporated, 10 to 15 minutes. Serve as side dish with meats, curry, eggs, etc.

Serves 6.

Amy Vanderbilt
Etiquette Expert

Italian Fish Soup

3 tablespoons	2 diced, pared
salad oil	medium pota-
⅓ cup chopped	atoes
celery (about	2 tablespoons
1 big stalk)	minced parsley
⅓ cup minced	2½ teaspoons salt
onion (about	¼ teaspoon pep-
1 medium)	per
¼ cup minced	1 lb. flaked,
green pepper	cooked fish
(about ¼ of a	(any white
medium one)	fish)
1 No. 2½ can	1 cup cleaned,
(3½ cups) to-	cooked or can-
matoes (Ital-	ned shrimp (
ian style pre-	5-oz. can)
ferred)	¼ cup dry white
3 cups water (or	wine
fish or vege-	Grated Parme-
table stock)	san cheese
	Croutons

Sauté in oil until just tender, celery, onion and green pepper, then add tomatoes, water, potatoes, parsley and seasoning. Bring mixture to boil, then reduce heat so that it just simmers. After about a half hour, add fish and shrimp and simmer about 10 minutes longer. Just before serving, add wine. Pour into tureen and sprinkle liberally with croutons and grated Parmesan or other Italian cheese.

Serves 6.

Risë Stevens *Metropolitan Opera Star*

Our Sauerkraut Dinner

2½ lbs. sauerkraut	1 teaspoon salt
1 or 2 bay leaves	1 tablespoon water
½ teaspoon pepper	2 lbs. cubed, mixed beef, veal and pork
1 cup water	1 tablespoon sugar
¼ cup shortening (lard preferred)	1 cup commercial sour cream
1 minced, medium onion	
1 teaspoon paprika	

Rinse sauerkraut in cold water, place in kettle, and add bay leaves, pepper, and cup water. Let mixture simmer in covered kettle ½ hour, stirring occasionally with fork, adding water when necessary. Meanwhile, in Dutch oven heat shortening; add onion and sauté until glossy, then add paprika, salt, tablespoon of water, and meat. Cover Dutch oven and let meat simmer slowly ½ hour, stirring occasionally. Stir in sauerkraut and sugar and continue cooking covered for 1½ hours or until meat is very tender. Stir in sour cream and serve at once.

Serves 6 generously.

Herman Hickman *Sports Authority*

Chicken Hickmano

¾ cup butter or margarine	1 teaspoon oregano
½ cup olive oil	2 teaspoons salt
4 minced cloves garlic	1¼ teaspoons freshly ground pepper
3 minced medium onions	½ cup flour
2 pared, grated carrots	8 to 10 whole, boned chicken breasts
¼ cup snipped parsley	1 lb. Mozzarella cheese (8 to 10 slices)
1 No. 2½ can Italian tomatoes	Parmesan cheese, freshly grated
4 6-oz. cans tomato paste	

In Dutch oven, heat ½ cup butter or margarine and ¼ cup olive oil. Add garlic, onions, carrots, parsley, and sauté until tender.

Now add tomatoes and tomato paste. Let mixture simmer uncovered 30 minutes. Then add oregano, 1 teaspoon salt and one teaspoon pepper. Allow it to simmer another half hour. Meanwhile, start heating oven to 350° F. In paper bag combine flour and rest of salt and pepper. Then add chicken breasts to bag, several at a time, and shake. Next heat in skillet until quite hot, remainder of butter or margarine and olive oil. Add chicken breasts to skillet and sauté slowly until golden brown on all sides and quite tender. Place one piece of chicken in each individual casserole. Then top each with slice of Mozzarella cheese. Place casseroles in oven and bake, uncovered, about 15 minutes, or until cheese is melted but not hard. Now spoon generous helpings of sauce over chicken in each casserole, and serve at once, passing Parmesan cheese.

Serves 8 to 10.

Elmo Roper *Public Opinion Expert*

Beef Stew with Red Wine

2 lbs. boneless chuck, trimmed of fat	¼ cup hot butter or margarine
1 cup dry red wine	1½ cups water
½ cup flour	1 lb. small white onions
½ teaspoon salt	6 sliced, scraped carrots
½ teaspoon pepper	2 teaspoons salt

Cut boneless chuck into 1" pieces, place in bowl, and pour wine over it. Let stand in refrigerator 2 to 12 hours or overnight. In paper bag, mix flour, ½ teaspoon salt, and pepper. Drain meat, reserving wine. Shake meat a few pieces at a time in bag to coat with flour. Then brown well on all sides in shortening in Dutch oven. Stir in 1/3 cup reserved wine and water. Bring to boil, stirring. Simmer, covered, over low heat, 2 hours, stirring occasionally. Then add another 1/3 cup reserved wine, onions and carrots. Simmer, covered, 30 minutes, and stir in remaining reserved wine and 2 teas-

spoons salt. Simmer, covered, 40 min., or until vegetables are tender. Serve over hot, cooked noodles.

Makes 6 servings.

Alfred Hitchcock Producer-Director

Double-Thick Rare Steak

- | | |
|-------------------------------|--------------------------------|
| 1 cut clove garlic | 1 tablespoon |
| $\frac{1}{2}$ cup crumbled | lemon juice |
| blue cheese | 1 teaspoon salt |
| $\frac{1}{4}$ cup soft butter | $\frac{1}{2}$ teaspoon freshly |
| or margarine | ground pepper |
| 1 teaspoon Wor- | |
| cestershire | Porterhouse |
| 1 tablespoon pre- | steak, 3-inches |
| pared mustard | thick |

Preheat broiler and rack 10 minutes. Then rub steak with garlic. Arrange on broiler rack with top of steak 5 inches below heat. If you can't place steak this low and it browns too quickly, lower heat toward end of broiling period. Broil 20 to 25 minutes on first side, or until well browned. Meanwhile, cream together well cheese, margarine, Worcestershire, mustard, lemon juice, salt and pepper. Then turn steak and broil on other side 20 to 25 minutes. Now cut into steak near bone and check rareness. Broil longer if necessary. Then spread cheese mixture on steak and broil 5 minutes longer or until topping is golden brown. Serve at once on hot platter.

Serves 6 to 8.

Licia Albanese Metropolitan Opera Star

Christmas Cake

- | | |
|------------------------------|---------------------------|
| 4 cups milk | $\frac{1}{3}$ cup cherry |
| 2 envelopes un- | juice |
| flavored gela- | 1 teaspoon va- |
| tine | vanilla extract |
| 2 egg yolks | 2 egg whites, |
| $\frac{3}{4}$ cup granulated | beaten until |
| sugar | stiff |
| $\frac{1}{4}$ teaspoon salt | $1\frac{1}{2}$ cups heavy |
| $\frac{3}{4}$ cup chopped | cream, |
| maraschino | whipped |
| cherries | Packaged va- |
| | vanilla wafers |

Place 1 cup of milk in small bowl and

sprinkle in gelatine. Allow it to soften. In double boiler, scald 3 cups of milk, meanwhile beating egg yolks with fork. Pour some of scalded milk, gelatine, sugar and salt into egg yolks, return this to rest of scalded milk, and cook, stirring, until mixture coats spoon. Allow mixture to cool a few minutes; then add cherries, cherry juice, and vanilla extract. Now refrigerate mixture, stirring occasionally until it is completely cold and begins to thicken. Then fold in beaten egg whites and half of whipped cream. Lightly butter a 9" clamppless spring-form pan with round insert in place. Line bottom and sides of pan with vanilla wafers, pour in filling, and arrange more vanilla wafers on top. Refrigerate at least 12 hours. At serving time, unmold cake and frost sides and top with rest of whipped cream.

Serves 8 to 10.

Harriet and Ozzie Nelson Television Stars

Ham-and-Chicken Casserole

- | | |
|--------------------------------|-----------------------------|
| 1 cup regular or | cheese ($\frac{1}{4}$ lb.) |
| processed rice | Dash nutmeg |
| $1\frac{1}{2}$ lb. slice fully | and pepper |
| cooked ham | 2 cups diced |
| $\frac{2}{3}$ cup minced | cooked chicken |
| onions | $\frac{1}{4}$ cup pimento |
| 3 cups medium | strips |
| white sauce | $\frac{1}{2}$ cup buttered |
| 1 cup diced, | fresh bread- |
| process sharp | crumbs |
| American | |

Cook rice as label directs. Meanwhile, trim some fat from ham, place fat in skillet, and heat. When skillet is hot, remove fat, add ham slice, and sauté until golden. Then cut ham into strips. In fat left in skillet, sauté minced onions until tender. Stir onions into white sauce and add cheese, nutmeg, pepper and chicken. Then, into 3-qt. casserole, spoon just enough rice to cover bottom. Add layer of ham, more rice, then layer of sauce, repeating until all are used, ending with sauce. Garnish with pimento strips and bread crumbs. Bake mixture at 350° F. until bubbles.

Serves 8.

Raymond Loewy Industrial Designer

Thin Veal Forestier

1½ lbs. veal outlet cut into very thin slices and then pounded even thinner
1 clove garlic
Flour
¼ cup butter or margarine
½ lb. mushrooms, sliced thin

½ teaspoon salt
Dash pepper
⅓ cup dry vermouth
1 teaspoon lemon juice (fresh, frozen, or canned)
Snipped parsley

Rub veal all over with garlic. Then dip into flour, coating each side well. In skillet heat shortening till quite hot, add veal slices, several at a time, and sauté until golden brown on each side. Heap mushrooms on top of veal and sprinkle them with salt, pepper and vermouth. Cover skillet and allow to cook over low heat about 20 minutes or until fork-tender. Lift cover occasionally to be sure veal is moist. If necessary, add a tablespoon of water. Just before serving, sprinkle with lemon juice and parsley. If preferred, a chafing dish may be used to complete the cooking after the veal has browned. *Serves 6*

Professor Carl Carmer Author

Election Cake

1 pkg. hot roll mix
1 cup butter or margarine
1 cup granulated sugar
½ cup commercial sour cream
1 egg, unbeaten
1¼ cups sifted,

all-purpose flour
½ teaspoon baking soda
⅓ teaspoon nutmeg
¾ cup currants
¾ cup chopped walnuts

Make up hot roll mix as label directs, but don't let rise. Into 1 cup dough blend shortening, sugar, sour cream and egg. Let remaining dough rise and bake as rolls to be served later. Sift together flour, baking soda and nutmeg and mix lightly with currants and walnuts. Stir flour mixture into dough mixture. Turn dough into greased, 10" x 5" x 3" loaf pan. Cover, let rise in warm place, 80° to 85° F., 1 hour. Bake cake at 325° F. 1 to 1¼ hours or until cake tester inserted in center comes out clean. Cool in pan on cake rack. Best made day or so ahead of serving. *Makes 1 loaf.*

ROADSIDE INNS

Where Travelers in America Can Find Superb Cooking

Reprinted by Courtesy of Life Magazine

Northeast

SNOWBERRY'S LOBSTER HOUSE, Pine Point, Maine, sits on the shore by the Atlantic. It serves lobsters, clams and other local seafood.

LOVETT'S, Franconia, N. H., is a 160-year-old farmhouse with Early American decor and American cooking.

THE SHELburne HARBOUR INN, Shelburne, Vt., is a Georgian mansion on Lake Champlain. Menu is mostly French.

NEWFANE INN, in Newfane, Vermont, was built in 1787, serves French and Italian dishes as well as local fare.

GUNDLACH'S HOFBRAU HOUSE, Plainville, Mass., is a clapboard farmhouse where guests get German-American cooking, German wines.

THE TOLL HOUSE, Whitman, Mass., dates from 1709. Its staple is New England cooking, but it offers a different foreign dish each week.

HILLINGSWORTH, East Brewster, Mass., a gray shingle house on the bay side of Cape Cod, serves French food.

THE WHALE INN, Goshen, Mass., a farmhouse, serves American food.

THE FERRY TAVERN, Old Lyme, Conn., was once a Connecticut River ferry station. Its specialty is seafood.

SIMSBURY HOUSE, Simsbury, Conn., is a Victorian mansion whose dining room, terrace, carriage house are used for dining. Menu is American.

THE KREBS, Skaneateles, N. Y., serves American dishes like strawberry shortcake or ham with sherry-maple glaze.

LA CREMAILLERE A-LA-CAMPAGNE, Banksville North Castle, N. Y., occupies an old farmhouse, 35 miles outside N.Y.C., cuisine and wines are French.

BIRD AND BOTTLE, built in 1761 in Garrison, N. Y., as Warren's Tavern. Two types of food, Creole and native, are served under old maples or indoors.

THE SILVER HORN, Millbrook, N. Y., a remodeled old Quaker meeting-house, serves steaks from its own Angus cattle.

THE SWISS TAVERN, Pompton Lakes, N. J., has a Swiss menu featuring *truite au bleu*, veal in white wine.

THE TOW-PATH HOUSE, New Hope, Pa., an old canal station, specializes in lobster thermidor. Guests eat on terraces by a stream.

THE PIPERSVILLE INN, Pipersville, Pa., is an old brick Pennsylvania Dutch inn serving table d'hôte German cooking—in large portions.

South

THE GRANARY, built in Georgetown, Md., 130 years ago as a grain depot, specializes in steaks and Chesapeake rockfish.

OLNEY INN, Olney, Md., is a spacious shingled farmhouse where mint juleps are served on wide lawns under the elms. The menu is American.

THE MILTON INN, Sparks, Md., built in 1740 of native fieldstone. Its specialties are Maryland Crab Imperial, Cold Shrimp Louis, chicken lobster and Rock Cornish game hen.

THE TIDES INN, at Irvington, Va., on Rappahannock River, has dock for yachts, serves spoon bread and oyster stew made from colonial recipes.

THE BEAUMONT INN, Harrodsburg, Ky. This hundred-year-old inn upholds local southern dishes like Kentucky ham, littlepig sausages, fried apples and cheese pie.

THE NU-WRAY INN, Burnsville, N. C., a mountain inn built around a 125-year-old log house, serves southern, family-style meals at set hours.

THE SQUIRREL INN, Summerville, S. C., offers continental food and good wine in a setting of azaleas and Spanish moss.

CHALET SUZANNE, Lake Wales, Fla., has an international cuisine to fit decorations imported from Spain, Italy, Egypt and Scandinavia.

OLD TALBOTT TAVERN, Bardstown, Ky., a white brick inn, serves Kentucky dishes like ham with red-eye gravy.

SPRING LAKE RESTAURANT, Bellefonte, Ark., has glassed-in dining room out over trout pond. Menu has trout, catfish.

THE STAGECOACH INN, Salado, Texas, along the old Chisholm trail, was once patronized by Jesse James and General Custer. It offers Texan fare, such as steaks and hush puppies.

North Central

THE GOLDEN LAMB INN, Lebanon, Ohio, state's oldest inn, is famous for Virginia ham, blackbottom pudding, sour cream dishes.

THE OLD BARN INN, St. Albans, Mo., formerly a cow barn, offers an American menu with lavish desserts on terraces near a pool.

THE OLD OLTZ HOUSE, Creve Coeur, Mo., cooks on order guinea hen, fresh rainbow trout and duckling with wine sauce.

THE FOX AND HOUNDS, Hubertus, Wis. (near Milwaukee), is a log house in kettle moraine hills. A specialty is roast duck with wild rice.

THE LOWELL INN, Stillwater, Minn. on the St. Croix River, has indoor pool from which patrons select their brook trout.

THE OX YOKE, Amana, Iowa, is one of four good family-style Amana Society eating places in the community. Food is German.

THE MILK PAIL, Dundee, Illinois, offers a variety of game birds and fish from its own preserve.

West

BONANZA INN, Wally Hot Springs, Nev., dates from Gold Rush days. Varied cuisines including a huge smorgasbord.

THE COUNTRY KITCHEN, Littleton, Colo., features smorgasbord with choice of 70 Swedish dishes in a chink-log mountain cabin.

THE COPPER KETTLE, Aspen, Colo., once a mining post, specializes in dishes from six countries—a different specialty each night.

ARDOVINO'S, Anapra, N. Mex. (near El Paso), is isolated white ranch house with windmill overlooking swimming pool. Cooking is Italian.

LA POSTA, Mesilla, N. Mex., an old adobe training post in desert country, has Mexican food but also serves steaks and western dishes.

PARRY LODGE, Kanab, Utah, near the Grand Canyon, is a rambling white house serving American dishes like pot roast or stewed chicken.

OJAI VALLEY INN, Ojai, Calif., has a country club atmosphere, looks out to the Santa Ynez Mountains, offers elaborate suppers and buffets.

APPLE VALLEY INN, Victorville, Calif., is a stone-and-redwood ranch resort with a huge outdoor barbecue pit and a 30-foot-long buffet.

THE NEPENTHE, Big Sur, Calif., has a barbecue pit at the brink of a high cliff over the Pacific. The menu is international.

LITTLE RIVER INN, near Mendocino, Calif., is a farmhouse overlooking the Pacific. Specialties are abalone dishes and fresh berry desserts.

SNOQUALMIE FALLS LODGE, 29 miles east of Seattle, offers a magnificent view with its northwestern dishes. Specializes in big Sunday breakfast.

MON DESIR, Central Point, Ore., is an old country home with landscaped gardens. Specialty is marinated prime ribs with home-grown herbs.

THE CRAB BROILER, Seaside, Ore., serves local crabs, oysters and razor clams in an English tavern style setting.

THE ALDERBROOK INN, Union, Wash., is a rambling white lodge on the Hood Canal featuring local salmon and seafood.

HEADLINE HISTORY OF OUR TIMES

Based on Newspaper Accounts of Important Events

The Headline History is based on the date when historical events came to the knowledge of the public through the newspapers. The events themselves may have occurred at a different date. For events previous to Headline History, see Page 758, for Historical and News Events from Ancient to Modern Times. This is compiled by the Encyclopaedia Britannica staff, and it begins with the Battle of Actium in 31 B.C. This includes a chronology of World War I.



1917

Mar. 8—Russian Revolution begins.

Mar. 15—Tsar Nicholas II abdicates.

Apr. 6—U. S. enters World War I.

Apr. 16—Lenin and other exiled Bolshevik leaders arrive in Petrograd from Switzerland; were allowed to pass through Germany in sealed railroad car.

Nov. 6-7—Bolsheviks overthrow Kerensky, seize power.

1918

Jan. 8—Wilson's 14-point address to Congress calls for self-determination, removal of economic barriers, League of Nations.

Mar. 3—Russia makes separate treaty with Central Powers at Brest-Litovsk.

July 16—Tsar Nicholas II and family shot.

Nov. 11—World War I ends.

1919

Mar. 2—3rd International founded.

June 28—Versailles Treaty signed.

Aug. 11—Germany becomes republic as Weimar Constitution is promulgated.

1920

Jan. 10—League of Nations officially inaugurated as Versailles Treaty goes into effect.

Jan. 16—1st League Council meeting in Paris. Permanent members: England, France, Italy, Japan. (Germany made permanent member 1926 upon admission to League; Russia, 1934.)

Jan. 16—Prohibition goes into effect.

Mar. 13-17—Kapp Putsch by monarchists results in brief seizure of Berlin government buildings; collapses as result of general strike.

Mar. 19—Senate finally rejects Treaty of Versailles because of League of Nations proviso.

Apr. 25—War between Russia and Poland begins. Treaty of Riga, Mar. 18, 1921, establishes Polish-Russian border.

May 19—Persia (now Iran) presents 1st dispute to League; demands Russia get out of Azerbaijan. Russia does.

Aug. 26—Woman suffrage amendment ratified.

1921

Mar. 8—Allies occupy Düsseldorf, Duisburg, Ruhrort because of reparations default; Germany accepts ultimatum, finances reparations May 11.

Mar. 17—New Economic Policy (NEP) in Russia permits private enterprise on small scale; small private farms, limited hired labor and leases permitted 1922.

1922

Feb. 6—Washington Conference guarantees China's integrity in 9-Power Treaty; establishes naval ratios of 5:5:3 for U. S., Britain and Japan.

Apr. 16—Treaty of Rapallo provides for economic co-operation between Germany and Russia.

June 15—1st meeting of Permanent Court of International Justice (World Court).

Sept. 21—Fordney-McCumber Tariff sets highest rates in American history.

Oct. 27—Mussolini marches on Rome.

1923

Jan. 11—French and Belgians occupy Ruhr because of reparations default.

Aug. 31—Italy, blaming Greece for death of Italian on Greek border, seizes Corfu; League intervenes; Italy withdraws; Greece to pay indemnity.

Nov. 8-9—Munich beer hall putsch led by Hitler put down; Hitler sentenced to 5 years, serves less than 1; writes *Mein Kampf* in jail.

Nov. 20—German mark falls to 4.2 trillion to dollar.

1924

Jan. 21—Lenin dies; struggle for power begins between Stalin and Trotsky.

Apr. 9—Dawes Plan reorganizes Reichsbank, revises reparations and lends Germany gold to back up currency.

May 26—Immigration quotas set: annual immigrants from each nation to be 2% of persons of that nationality residing in U. S. in 1890.

July 21—Leopold and Loeb sentenced to life imprisonment for kidnapping of 14-year-old boy.

1925

Apr. 26—Hindenburg elected President of Germany by minority vote.

July 10-21—Scopes evolution trial held in Dayton, Tenn.

Oct.—Locarno Conference held to insure peace, preserve boundaries.

1927

May 20-21—Lindbergh flies solo across Atlantic.

Aug. 23—Sacco and Vanzetti executed.

Nov.—Trotsky expelled from Communist party.

1928

Aug. 27—Kellogg-Briand Pact signed; 15 nations (eventually 62) outlaw war; ratified by Senate Jan. 15, 1929.

Oct. 1—Russia's 1st 5-Year Plan begins.

1929

June 7—Young Plan establishes Bank for International Settlements; reduces reparations.

Oct. 24—Worst stock crash wipes out thousands of accounts.

1930

Apr. 22—London naval pact signed by U. S., Britain, France, Italy, Japan; Japan benefits by revision of naval ratio.

1931

Apr. 14—Alfonso XIII quits Spain; Alcalá Zamora becomes President of provisional republic.

May 11—Austrian Credit Anstalt fails; 6,000,000 unemployed by 1932.

Sept. 18-19—Explosion on Manchurian railway serves as pretext for Japan to begin occupation of Manchuria.

1932

Jan. 7—Stimson Doctrine: U. S. will not recognize gains achieved by armed force; recognition of Manchukuo withheld.

Jan. 22—Reconstruction Finance Corporation (RFC) established.

Jan. 28—Japan begins invasion of international settlement of Shanghai.

June 7—Bonus March on Washington, D. C.

July 31—Nazis elect 230 to Reichstag, Socialists 133, Centrists 97, Communists 89.

Aug. 13—Hitler refuses Vice-Chancellorship; demands all or nothing.

Oct. 31—Hoover warns "grass will grow in streets" under New Deal.

Nov. 6—German election fails to break deadlock; Nazis lose 2,000,000 votes.

1933

Jan. 30—Hitler made Chancellor of Germany by Hindenburg.

Feb. 15—FDR misses assassination at Miami; Mayor Cermak of Chicago fatally wounded.

Feb. 27—German Reichstag building burns; Communists accused.

Mar. 5—Reichstag elections give Nazis and Nationalist allies 52% of vote.

Mar. 6—Roosevelt proclaims bank holiday; embargoes gold.

Mar. 12—FDR's first "Fireside Chat."

Mar. 23—Reichstag gives Hitler blanket powers for 4 years; 94 Social Democrats opposed; many Social Democrats and all Communists under arrest or in hiding.

Mar. 27—Japan gives notice of quitting League (effective 1935).

Mar. 28—Nazis begin systematic boycott of Jewish businessmen, doctors, lawyers.

Mar. 31—Civilian Conservation Corps (CCC) to relieve unemployment and aid reforestation and flood control.

Apr. 19—U. S. goes off gold standard.

May 18—Tennessee Valley Authority (TVA) established.

June 12-July 27—London Economic Conference attempts to stabilize currencies; defeated by FDR's opposition.

June 16—National Industrial Recovery Act (NIRA) signed. Declared unconstitutional May 27, 1935.

Oct. 14—Hitler's Germany gives notice of quitting League (effective 1935).

Oct. 17—Einstein arrives in U. S. from Germany.

Nov. 12—92% of all voters cast ballots for Nazis in 1-party election; 3,000,000 invalid ballots register opposition.

Nov. 16—U. S. and Russia resume full relations at 11:50 P.M. EST.

Dec. 5—Prohibition ends in U. S.

1934

- Jan. 10*—Van der Lubbe, Dutch Communist, beheaded for Reichstag fire.
- Jan. 31*—Gold value of U. S. dollar cut to \$.5906.
- Mar. 24*—FDR signs Tydings-McDuffie Act giving Philippines independence on July 4, 1946.
- May 28*—Dionne quintuplets born.
- June 6*—Securities and Exchange Act signed; regulates licensing of stock exchanges and speculative practices.
- June 12*—Reciprocal Trade Agreements Act signed; allows President limited trade-agreement authority without need for Senatorial approval.
- June 19*—Federal Communications Commission (FCC) created to regulate interstate telegraph, telephone, cable and radio.
- June 28*—Federal Housing Administration (FHA) to aid in modernizing homes and in new construction.
- June 30*—Hitler "purge" kills Ernst Roehm and other Nazi leaders.
- Aug. 2*—Hindenburg dies; Hitler becomes absolute dictator of Germany.

1935

- Jan. 4*—Roosevelt asks 3.5 million jobs in public works (PWA) to end dole.
- Jan. 13*—Saar plebiscite 90% for reunion with Germany; Saar returned to Germany Mar. 1.
- Mar. 6*—22,375 million on relief rolls.
- Mar. 16*—Hitler defies Versailles Treaty by re-establishing universal military training in Germany.
- July 5*—Wagner-Connelly Act establishes National Labor Relations Board (NLRB). Upheld by Supreme Court Apr. 12, 1937.
- Aug. 14*—Social Security Act signed; establishes old-age benefits and unemployment insurance. Upheld by Supreme Court May 24, 1937.
- Aug. 20*—3rd International decides Russia will side with democracies against Fascist states.
- Aug. 31*—Neutrality Act, resulting from Ethiopian crisis, requires President to ban arms sales to nations he declares at war.
- Sept. 10*—Huey Long dies from being shot Sept. 8.
- Sept. 15*—Nuremberg laws deprive Jews of citizenship and bar intermarriage.
- Oct. 3*—Italy invades Ethiopia.
- Oct. 7*—League of Nations condemns Italy.
- Nov. 9*—Committee for Industrial Organization, headed by John L. Lewis, organized within AFL; expelled in 1937; becomes Congress of Industrial Organizations (CIO) in Nov. 1938.

Nov. 18—League economic and financial sanctions against Italy go into effect. (Embargo on oil never applied.)

1936

- Jan. 15*—Japan withdraws from naval conference at London; U. S., France, Britain sign pact Mar. 25.
- Jan. 20*—George V dies; Prince of Wales becomes Edward VIII.
- Feb. 16*—Spanish Popular Front (republicans and leftists) wins parliamentary elections.
- Mar. 7*—Hitler sends German troops into Rhineland, defying Versailles Treaty; denounces Locarno Pact.
- Apr. 3*—Bruno Richard Hauptmann electrocuted for kidnap-slaying (Mar. 1, 1932) of Lindbergh baby.
- May 9*—Ethiopia annexed to Italy.
- July 17*—Spanish civil war begins; troops led by Gen. Francisco Franco revolt in Spanish Morocco; uprisings follow all over Spain.
- Aug. 19-23*—Zinoviev and Kamenev executed in Russia as collaborators with Trotsky and Nazi secret police.
- Oct. 1*—Franco named Chief of State by rebels; establishes capital at Burgos.
- Oct. 27*—Rome-Berlin Axis formed.
- Nov. 18*—Italy and Germany recognize Franco regime in Spain.
- Nov. 25*—Japan signs anti-Comintern treaty with Germany; Italy adheres Nov. 6, 1937.
- Dec. 1-23*—Buenos Aires conference: 21 American republics pledge to consult if peace is imperiled; no nation to interfere with another's domestic affairs.
- Dec. 11*—Edward VIII abdicates; his brother becomes George VI.

1937

- Jan. 20*—FDR second inaugural sees "one-third of the nation ill-housed, ill-clad, ill-nourished."
- Feb. 2*—Sit-down strikers at Flint, Mich., defy court order telling them to evacuate.
- Feb. 5*—FDR asks power to enlarge Supreme Court to maximum of 15 Justices; plan defeated by Senate July 22.
- May 1*—Neutrality Act further limits sales to belligerents.
- May 6*—German zeppelin *Hindenburg* burns at Lakehurst, N. J.
- May 28*—Chamberlain succeeds Baldwin as British Prime Minister.
- June 3*—Duke of Windsor (former Edward VIII of Britain) weds Wallis Warfield Simpson.
- June 12*—Marshal Tukhachevsky and 7 generals executed in Russia for espionage and high treason.

July 2—Amelia Earhart Putnam missing in Pacific in round-the-world flight.

July 7—Japan begins undeclared war on China; fighting continues throughout World War II until fall of Japan.

Oct. 5—FDR delivers speech calling for "quarantine" of aggressors.

Nov. 29—Britain and France agree to give Hitler colonies in exchange for peace.

Dec. 11—Italy gives notice of quitting League (effective 1939).

1938

Feb. 16—New Agricultural Adjustment Act signed; establishes parity payments, ever-normal granaries, crop insurance.

Feb. 20—Eden resigns as British Foreign Minister; charges Chamberlain "seeks to buy peace."

Mar. 12—Nazis seize Austrian government; Schuschnigg ousted.

June 25—Fair Labor Standards Act provides 40¢ minimum wage and 40-hour week, to be achieved within 8 and 3 years, respectively.

July 18—Douglas Corrigan lands in Dublin in "wrong way" flight.

Sept. 29-30—Britain, France, Italy, Germany in parley at Munich agree to dismemberment of Czechoslovakia; Chamberlain returns to London with "peace in our time."

Oct. 30—"Attack from Mars" radio program by Orson Welles causes panic.

Nov. 13—Mother Cabrini first American to be beatified by Vatican.

Nov. 13—Jews herded into camps; fined \$400,000,000 because of Vom Rath assassination.

1939

Feb. 27—Sit-down strikes outlawed by U. S. Supreme Court.

Mar. 15—Hitler enters Prague.

Mar. 28—Madrid surrenders to Franco Forces.

Apr. 1—Civil war ends in Spain; U. S. recognizes Franco government.

Apr. 28—Hitler rebuffs FDR's peace plea in Polish quarrel.

Apr. 30—New York World's Fair opens.

May 3—Litvinov retires as Commissar for Foreign Affairs, marking end of Western orientation in Soviet diplomacy; Vyacheslav M. Molotov succeeds him.

May 5—Poland refuses to yield Danzig to Hitler; offers to negotiate.

Aug. 24—Germany and Russia sign 10-year nonaggression pact.

Aug. 27—Hitler demands Danzig and Corridor; agrees Aug. 29 to negotiate;

asks for Polish delegation; considers plan rejected Aug. 31 when no Polish delegate appears; publishes 16-point peace plan, which Poland rejects.

Sept. 1—Germany invades Poland and annexes Danzig; Britain and France give Hitler ultimatum.

Sept. 3—Britain and France declare war.

Sept. 5—U. S. proclaims neutrality.

Sept. 17—Russia invades Poland.

Sept. 18—Nazi and Russian armies meet at Brest-Litovsk, Poland.

Sept. 28—Poland partitioned by Germany and Russia.

Nov. 4—FDR signs bill removing arms embargo; substitutes "cash and carry" trade with belligerents.

Nov. 30—Russia attacks Finland.

Dec. 14—Soviet Russia expelled from League for invading Finland.

Dec. 17—Admiral Graf Spee scuttled off Montevideo by Hitler order after fleeing British warships.

1940

Mar. 12—Finland surrenders.

Apr. 9—Nazis invade Denmark and Norway.

May 10—Nazis invade Netherlands, Belgium, Luxembourg.

May 10—Chamberlain resigns as Prime Minister; Churchill takes over.

May 12—Germans cross French frontier.

May 13—Churchill tells Britain he has "nothing to offer but blood, toil, tears and sweat."

May 14—Dutch surrender.

May 16—FDR asks \$1.8 billion for defense, 50,000 planes.

May 26-June 3—Dunkerque evacuation: about 335,000 out of 400,000 Allied soldiers rescued from Belgium by civilian and naval craft from Britain.

May 28—King Leopold surrenders Belgian army; Cabinet disowns him.

May 28—Council of National Defense established to co-ordinate industry transportation, finance and labor.

June 9—Norway surrenders.

June 10—Italy declares war on France and Britain; invades France.

June 14—Germans enter Paris; city undefended.

June 15—Russia seizes Lithuania; seizes Latvia and Estonia June 17.

June 16—Pétain government formed in Bordeaux; moved to Vichy July 2.

June 22—France and Germany sign armistice at Compiègne.

June 23—De Gaulle forms French National Comm. in London; announces French will carry on war.

Aug. 8—German Luftwaffe launches all-out attack on England.

Aug. 21—Trotsky dies in Mexico City from assassin's attack Aug. 20.

Sept. 3—U. S. trades 50 over-age destroyers to Britain in return for right to lease cotes for 8 naval bases in British possessions.

Sept. 16—Selective Service Bill signed; over 16,000,000 register Oct. 16.

Oct. 27—New York World's Fair closes. 45 million paid admissions in 2 years.

Oct. 28—Italy invades Greece.

Nov. 14—Nazis bomb Coventry.

Dec. 29—FDR calls for all aid to Britain short of war; declares U. S. "Arsenal of Democracy."

1941

Mar. 11—FDR signs Lend-Lease Bill.

Apr. 13—Russia and Japan sign 5-year neutrality pact.

Apr. 17—Yugoslavia surrenders; Gen. Mihalović continues guerrilla warfare; Tito leads left-wing guerrillas.

Apr. 27—Nazi tanks enter Athens; remnants of British army quit Greece.

May 10—Rudolf Hess, Nazi Deputy Führer, lands in Scotland by plane.

May 24—HMS Hood, largest British warship, sunk by Nazi battleship *Bismarck*; *Bismarck* sunk by British naval and air attack May 27.

June 22—Hitler attacks Russia.

June 24—U. S. pledges all possible aid to U.S.S.R.

July 25—FDR freezes Japanese assets in U. S.; trade ties with Japan virtually severed.

Aug. 12—Pétain summons France to full support of Hitler.

Aug. 14—Atlantic Charter: FDR and Churchill agree on war aims.

Oct. 3—Hitler announces Russia is defeated and will never rise again.

Nov. 26—Hull presents proposals to envoys Kuruu and Nomura for re-adjusting U. S.-Japanese relations.

Dec. 7—Japan attacks Pearl Harbor, Philippines, Guam, forcing U. S. into war Dec. 8; Pacific Fleet crippled.

Dec. 8—U. S. and Britain declare war on Japan.

Dec. 10—Japanese planes sink British battleship *Prince of Wales* and battle cruiser *Repulse* off Malaya.

Dec. 11—Germany and Italy declare war on U. S.; Congress declares war on those countries.

Jan. 28—21 American nations, at Rio de Janeiro, call for severance of all ties with Axis.

Jan. 30—FDR signs price-control legislation.

Feb. 15—British surrender Singapore.

Mar. 17—MacArthur arrives in Australia; promises "I will return."

Apr. 9—U. S. forces on Bataan surrender.

Apr. 18—U. S. planes in Doolittle "Shangri-la" raid hit Tokyo.

May 4-8—Japanese fleet suffers heavy losses in Coral Sea; 1st naval battle in history fought entirely with carrier aircraft.

May 6—Gen. Wainwright surrenders Corregidor.

May 30—Over 1,000 RAF planes smash Cologne in one of war's mightiest raids.

June 4-6—U. S. aircraft inflict 1st serious setback on Japanese fleet near Midway.

June 10—Lidice, Czechoslovakia, razed; all males put to death in Nazi terror following Heydrich assassination.

Nov. 8—U. S. and Britain land great army in French North Africa.

Nov. 11—Nazis begin occupation of all France.

Nov. 13-15—U. S. smashes Japanese armada in Solomons.

Nov. 27—French scuttle main part of fleet at Toulon to save it from Nazis.

Dec. 1—Gasoline rationing begins.

1943

Jan. 14-24—Casablanca Conference: Churchill and FDR agree on unconditional-surrender goal.

Feb. 1-2—German 6th Army surrenders at Stalingrad; turning point of war in Russia.

Mar. 29—Rationing of meats, butter, cheese, canned fish, edible oils begins.

May 12—Remnants of Nazis trapped on Cape Bon, ending war in Africa.

May 15—3rd International (Comintern) dissolved in Moscow.

June 10—FDR signs withholding tax.

July 25—Mussolini deposed; Badoglio is Premier.

Sept. 3—Allied troops land on Italian mainland.

Sept. 8—Italy surrenders.

Sept. 10—Nazis seize Rome.

Oct. 19-Nov. 1—Moscow Conference: Hull, Eden, Molotov pledge unity to win war and establish world organization; promise democratic Italy and free Austria.

1942

Jan. 2—MacArthur gives up Manila; fights on to hold Bataan and Corregidor.

Jan. 5—Consumer rationing begins in U. S. as auto tires are rationed.

Nov. 22-26—Cairo Conference: FDR, Churchill, Chiang-Kai-shek pledge defeat of Japan, free Korea.

Nov. 28-Dec. 1—Teheran Conference: FDR, Churchill, Stalin agree on invasion plans.

Dec. 26—Nazi battleship *Scharnhorst* sunk by British off Norway.

1944

Jan. 22—Allied troops land behind German lines at Anzio near Rome.

June 4—Rome falls to Allies.

June 6—D-Day: Allies land in France.

June 15—Germans begin robot-bomb attacks on England.

July 20—Hitler wounded in bomb plot.

Aug. 25—Paris liberated.

Oct. 20—American troops invade Philippines.

Dec. 16—Germans launch counteroffensive in Belgium (Battle of Bulge).

1945

Jan. 12—German line crumbles; Allies regain 100 sq. mi. in "Bulge."

Feb. 3—U. S. troops enter Manila.

Feb. 11—Yalta Agreement signed by FDR, Churchill and Stalin.

Feb. 19—Marines land on Iwo Jima; raise flag on Mt. Suribachi Feb. 23.

Apr. 1—U. S. invades Okinawa.

Apr. 12—FDR dies; Truman is President.

Apr. 25—U. N. parley opens at San Francisco.

Apr. 25—Americans and Russians meet on Elbe.

Apr. 28—Mussolini and mistress, Clara Petacci, killed by partisans.

Apr. 29—33,000 inmates of Dachau concentration camp freed by U. S. forces.

Apr. 30—Soviet flag raised over Reichstag in Berlin.

May 1—Grand Adm. Karl Doenitz takes command in Germany; death of Hitler announced.

May 2—Berlin falls.

May 7—Germany surrenders unconditionally (V-E Day).

June 26—U. N. Charter signed at San Francisco; goes into effect Oct. 24.

June 28—Polish government under Russian influence installed, despite protests of government-in-exile.

July 16—A-bomb test at Alamogordo, N. Mex. (announced Aug. 6).

July 17-Aug. 2—Potsdam Conference: Truman, Churchill (Attlee after July 28), Stalin establish council of foreign ministers to prepare peace treaties; plan German postwar government and reparations.

July 26—Attlee Prime Minister; Churchill is out.

July 28—U. S. Senate ratifies (89-2) U. N. Charter.

Aug. 6—A-bomb blasts Hiroshima.

Aug. 8—Russia declares war on Japan.

Aug. 9—Nagasaki hit by A-bomb.

Aug. 14—Japan surrenders.

Sept. 2—Japanese sign surrender terms aboard battleship *Missouri* (V-J Day).

Oct. 24—U. N. officially established.

Nov. 15—Truman, Attlee and Mackenzie King decide in Washington Conference that A-bomb secrets will not be shared until U. N. adopts control plan.

Dec. 27—Moscow Conference, attended by Byrnes, Molotov and Bevin, makes preliminary plans for atomic-energy control, peace treaties and Korea.

1946

Jan. 10—1st meeting of U. N. General Assembly opens in London.

Jan. 17—1st meeting of Security Council opens in London.

Jan. 19—Iran presents 1st case to Security Council; demands Russia get out of Azerbaijan; Russia withdraws May 6.

Feb. 2—Trygve Lie installed as 1st U. N. Secretary-General.

Apr. 3—1st meeting of International Court opens in The Hague (formal opening Apr. 18).

Apr. 3—Japanese Lt. Gen. Homma executed; ordered Bataan Death March.

Apr. 8-18—Final Assembly session at Geneva dissolves League of Nations.

Apr. 29—U. S. proposes treaty with Britain, Russia and France to keep Germany disarmed 25 years; Russia cool to idea.

May 31—U. S. and Britain demand free elections in Rumania.

July 1—Underwater atom bombing at Bikini. (Repeated July 25.)

Oct. 1—Verdict in Nuremberg war trial: 12 Nazi leaders (including 1 tried in absentia) sentenced to hang; 7 imprisoned; 3 acquitted.

Oct. 15—Goering commits suicide a few hours before 10 other Nazis are executed Oct. 16.

Nov. 9—Truman ends all price and wage controls, except on rent, sugar and rice.

Dec. 3—Greece charges Albania, Bulgaria and Yugoslavia with aiding Communist rebels in northern part of Greece.

Dec. 4—Judge Goldsborough fines John L. Lewis \$10,000 and UMW \$3.5 million for contempt in disobeying Court order.

Dec. 19—Fighting breaks out in Indo-China between French and Reds.

Dec. 30—U. N. Atomic Energy Commission recommends (10-0) U. S. control plan; Russia and Poland abstain.

1947

Jan. 1—Britain nationalizes coal mines.

Jan. 28—U. S. rebukes Polish Communists for rigging election.

Feb. 10—Peace treaties for Italy, Rumania, Bulgaria, Hungary, Finland signed in Paris.

Mar. 4—Russia rejects U. S. plan for U. N. atomic-energy control.

Mar. 12—Truman asks Congress for \$400 million to save Greece and Turkey from Communist expansion (Truman Doctrine).

Apr. 14—General Motors settles wage dispute with United Electrical Workers (CIO) with increase equivalent to 15¢ per hour; sets pattern.

June 5—Secy. of State Marshall says U. S. may have to spend billions to put Europe on its feet economically (Marshall Plan).

June 23—Taft-Hartley Labor-Management Relations Act passed over Truman's veto.

July 12-15—16 nations meet in Paris to study Marshall Plan (Russia and 8 others stay away).

Aug. 1—Security Council calls on Dutch and Indonesians to cease hostilities.

Aug. 15—India freed by Britain.

Aug. 31—U. N. investigating committee recommends Britain give up control of Palestine and that Arab and Jewish states be established.

Oct. 5—Moscow announces formation of new 9-nation Communist Information Bureau (Cominform).

Nov. 14—General Assembly votes commission to set up free government for all of Korea.

Nov. 20—Princess Elizabeth married to Lt. Philip Mountbatten.

1948

Jan. 17—U. N. Good Offices Commission effects truce in Indonesia.

Jan. 30—Gandhi assassinated.

Feb. 23-25—Communists seize power in Czechoslovakia.

Mar. 10—Czech For. Min. Jan Masaryk plunges to death.

Apr. 20—Federal Court fines John L. Lewis \$20,000 and UMW \$1.4 million for criminal contempt for failure to call off strike within week, as ordered by Court.

Apr. 21—Security Council votes plebiscite in Kashmir to decide whether province goes to India or Pakistan; both sides object.

May 14—Nation of Israel proclaimed; British end mandate at midnight; Arab armies attack.

May 25—General Motors grants 11¢ hourly wage increase to UAW; wages to move up or down according to living costs—first escalator clause.

June 11—U. N. appeal brings temporary truce in Palestine.

June 18—Russia stops traffic between Berlin and Western occupation zones in Germany.

June 21—Berlin airlift begins; ends May 12, 1949.

June 22—Russian veto prevents Security Council from approving atomic-control plan favored by majority.

June 28—Stalin and Tito break.

Aug. 15—Independent Republic of Korea is proclaimed, following election supervised by U. N.

Nov. 4—General Assembly approves U. S.-sponsored atomic control plan.

Nov. 12—Verdict in Japanese war trial: Tojo and 6 others sentenced to hang (hanged Dec. 23); 18 imprisoned.

1949

Jan. 7—Cease-fire in Palestine.

Jan. 20—Truman proposes Point 4 Program to help world's backward areas.

Feb. 8—Cardinal Mindszenty sentenced in Hungary to life imprisonment.

Feb. 24—Israel signs armistice with Egypt.

Apr. 4—Start of NATO; treaty signed by 12 nations.

May 11—U. N. admits Israel.

Sept. 21—German Federal Republic (West Germany) established.

Sept. 24—Truman discloses Russia has set off atomic explosion.

Oct. 14—11 top Communist leaders in U. S. found guilty of advocating overthrow of government.

Oct. 16—Greek rebels announce end of military operations.

Oct. 26—Minimum wage raised to 75¢.

Dec. 8—Nationalist Chinese government moves to Formosa.

1950

Jan. 13—Russia boycotts Security Council (until Aug. 1) because Red China was refused admittance to U. N.

Jan. 21—Alger Hiss convicted of perjury in denying he gave U. S. secrets to Whittaker Chambers for Communists.

Jan. 31—Truman orders development of hydrogen bomb.

Feb. 11—Sen. Joseph R. McCarthy (R. Wis.) says 57 Communists are working in State Dept.

Mar. 1—Britain sentences Dr. Klaus Fuchs to 14 years in prison for giving atomic secrets to Russia.

June 25—North Koreans cross 38th parallel to invade South Korea.

June 27—Truman orders U. S. air and sea aid to South Koreans.

June 27—Security Council (at that time boycotted by Russia) calls on U. N. members to help repel North Korean aggression.

June 28—Reds capture Seoul.

July 8—Truman names MacArthur commander of U. N. forces in Korea.

Sept. 26—MacArthur announces capture of Seoul.

Oct. 7—U. S. 1st Cavalry make 1st U. S. crossing of 38th parallel.

Nov. 20—U. S. 7th Division unit reaches Manchurian border.

Nov. 26—Chinese open massive offensive; hurl U. N. forces back.

Dec. 19—Eisenhower named commander of NATO forces in Europe.

1951

Feb. 1—General Assembly condemns (44-7) Red China as an aggressor.

Mar. 19—6 nations initial Schuman Plan to pool European coal and steel market. (In effect Feb. 10, 1953.)

Mar. 24—MacArthur intimates U. N. will attack Red China; says he will meet with Reds at any time for truce talks.

Apr. 5—Julius and Ethel Rosenberg sentenced to death as atom spies.

Apr. 11—Truman removes MacArthur from all commands.

June 23—Russia proposes truce.

July 10—Truce talks begin in Korea.

Aug. 21—U. S. orders construction of world's 1st atomic submarine.

Sept. 8—Japanese peace treaty signed in San Francisco by 49 nations.

Oct. 26—Churchill again Prime Minister.

1952

Feb. 6—George VI dies; his daughter becomes Elizabeth II.

Feb. 20-25—NATO conference approves European Army; sets goal of 50 divisions and 4,000 planes by end of 1952.

Apr. 8—Truman seizes steel industry to prevent nation-wide strike.

May 26—Western Allies and West Germany sign peace contract at Bonn.

May 27—6 nations sign European Defense Community treaty at Paris.

June 2—Supreme Court (6-3) rules Truman's seizure of steel mills unconstitutional; mills returned to owners; USW goes on strike to July 24.

1953

Mar. 5—Stalin dies.

Mar. 6—Malenkov becomes Soviet Premier; Beria is Minister of Interior; Molotov is Foreign Minister.

Apr. 10—Dag Hammarskjöld begins term as U. N. Secretary General.

May 22—Eisenhower signs Off-Shore Oil Law giving states rights to minerals in submerged lands within their boundaries.

May 29—Mt. Everest climbed by British expedition.

June 2—Coronation of Elizabeth II.

June 8—Agreement on POWs reached at Panmunjom; India to head 5-nation commission for custodianship of POWs refusing repatriation.

June 17—East Berliners rise against Communist rule; quelled by tanks.

June 18-21—Pres. Rhee frees 27,000 anti-Red POWs in defiance of U. N.-Red prisoner agreement; truce talks halted June 20.

June 19—Rosenbergs executed.

July 10—Beria is imprisoned on charges of treason; executed Dec. 23.

July 10—Truce talks are resumed.

July 27—Korean armistice signed.

Aug. 5-Sept. 6—POWs exchanged in "Operation Big Switch"; 12,760 released by Reds, 75,799 by U. N.; U. N. believes Reds hold many back.

Aug. 20—Moscow announces explosion of hydrogen bomb.

Dec. 23-21 U. S. POWs turn down repatriation; prefer communism.

1954

Jan. 21—1st atomic-powered submarine, *Nautilus*, launched at Groton, Conn.

Jan. 26—U. S. Senate ratifies (81-6) mutual security treaty with Republic of Korea.

Mar. 1-5 Congressmen wounded as 3 Puerto Rican nationalists fire from House gallery.

Apr. 4—Arturo Toscanini resigns as conductor of NBC Symphony Orchestra.

Apr. 22-June 17—Army vs. McCarthy inquiry; subcommittee report Aug. 31 blames both sides.

Apr. 26—19-nation conference on Korea and Indo-China opens in Geneva.

May 7—Dienbienphu falls to Indo-China Red rebels.

May 17—U. S. Supreme Court unanimously bans segregation in public schools.

June 18—Anti-Communist exiles invade Guatemala; revolt ends July 2.

July 21—Indo-China truce signed at Geneva conference; Reds get half of Vietnam.

- Aug. 6—Emilie Dionne, one of quintuplets, dies at 20.
- Sept. 6—Eisenhower launches world atomic pool without Russia.
- Sept. 8—8-nation Southeast Asia defense treaty signed at Manila.
- Oct. 23—West Germany is granted sovereignty and is admitted to NATO and Western European Union.
- Nov. 27—Alger Hiss (see Jan. 21, 1950) released after 44 months in prison.
- Dec. 2—Senate "condemns" Sen. McCarthy on 2 counts by 67-22 vote.

1955

- Jan. 17—Submarine *Nautilus* goes to sea under atomic power.
- Apr. 5—Churchill resigns; Eden succeeds him Apr. 6.
- Apr. 12—Scientists OK Salk vaccine.
- May 31—Supreme Court leaves school desegregation to regional Federal courts.
- July 11—Eisenhower cancels Dixon-Yates contract.
- July 16—Hungary releases Cardinal Mindszenty. (See Feb. 8, 1949.)
- Sept. 19—Argentina ousts Perón.
- Sept. 24—Pres. Eisenhower suffers coronary thrombosis in Denver.
- Sept. 27—Egypt to buy Soviet arms.
- Dec. 7—AFL and CIO merge.
- Dec. 14—U. N. admits 16 new members.

1956

- Jan. 10—Britain to fly 1,600 paratroopers to Cyprus as result of Middle East crisis.
- Feb. 22—U. S. releases 40,000 kg. of Uranium 235 (worth \$1 million) for peaceful atomic power at home and abroad.
- Mar. 9—Archbishop Makarios of Cyprus is sent into exile by Britain.
- Mar. 20—Khrushchev calls Stalin murderer. (Speech made Feb. 24.)
- Apr. 5—Victor Riesel, labor columnist, attacked by acid thrower; pronounced permanently blind May 4.
- Apr. 7—Spain proclaims Spanish Morocco independent after 44 years.
- Apr. 8—6 Marine recruits drown in disciplinary night march at Parris Island, S. C., led by S/Sgt. Matthew C. McKeon.
- Apr. 18—Grace Kelly and Prince Rainier III married in civil ceremony. (Religious ceremony Apr. 19.)
- May 21—First aerial H-bomb tested over Namu I., Bikini Atoll (10-million tons TNT equivalent).

- June 9—Eisenhower undergoes operation to relieve blockage of small intestine due to ileitis; physicians say he will be physically fit to run for reelection.
- June 12—Scientists report radiation is peril to future of race.
- June 28-30—Workers' uprising against Communist rule in Poznan, Poland is crushed by tanks.
- July 19—U. S. withdraws its offer to help Egypt build Aswan dam on Nile.
- July 26—Egypt announces seizure of Suez Canal control.
- Aug. 4—S/Sgt. Matthew McKeon found guilty.
- Aug. 16—Adlai E. Stevenson wins Democratic presidential nomination.
- Aug. 17—Sen. Estes Kefauver wins Democratic Vice-Presidential nomination.
- Aug. 22—Republicans unanimously renominate Eisenhower and Nixon.
- Sept. 29—France and Germany agree that the Saar will return to Germany Jan. 1.
- Oct. 19—Japan and Russia sign agreement ending technical state of war.
- Oct. 21—Polish Communists restore Wladyslaw Gomulka to power, as party First Secretary.
- Oct. 24—Soviet troops and tanks in Hungary fight anti-Communist rebellion, Imre Nagy is new premier.
- Oct. 26—82 nations agree at U. N. on new International Atomic Energy Agency for peaceful use of atom. U. S. offers it 11,000 lb. of Uranium 235.
- Oct. 29—Israel launches attack on Egypt's Sinai Peninsula and drives toward Suez Canal.
- Oct. 31—British air attacks begin in Egypt.
- Nov. 4—U. N. assembly votes to organize U. N. police force to restore peace to Egypt.
- Nov. 5—British and French invade Egypt at Port Said.
- Nov. 6—Eisenhower-Nixon win with 41 states to 7 for Stevenson-Kefauver.
- Nov. 6—British, French cease fire at Port Said and halt Suez advance.
- Nov. 21—U. S. admits first 60 Hungarians who fled from Soviet domination.
- Nov. 23—Russians kidnap Hungary's Premier Imre Nagy and replace him with Janos Kadar.
- Dec. 8—Christian A. Herter of Massachusetts becomes Under Secretary of State, succeeding Herbert Hoover, Jr.
- Dec. 12—U. N. General Assembly condemns Russia for aggression in Hungary. Vote: 55 yes, 8 no, 13 abstaining.
- Dec. 22—Anglo-French forces withdraw from Egypt.

(For later items see News Record of 1957.)

The Cairo Conference

Important provisions of the Conference, which was held Nov. 22-26, 1943:

The several military missions have agreed upon future military operations against Japan. The Three Great Allies expressed their resolve to bring unrelenting pressure against their brutal enemies by sea, land, and air. This pressure is already rising.

The Three Great Allies are fighting this war to restrain and punish the aggression of Japan. They covet no gain for themselves and have no thought of territorial expansion. It is their purpose that Japan shall be stripped of all the islands in the Pacific which she has seized or occupied since the beginning of the first World War

in 1914, and that all the territories Japan has stolen from the Chinese, such as Manchuria, Formosa, and the Pescadores, shall be restored to the Republic of China. Japan will also be expelled from all other territories which she has taken by violence and greed. The aforesaid Three Great Powers, mindful of the enslavement of the people of Korea, are determined that in due course Korea shall become free and independent.

With these objectives in view the three Allies, in harmony with those of the United Nations at war with Japan, will continue to persevere in the serious and prolonged operations necessary to procure the unconditional surrender of Japan.

The Teheran Conference

(Nov. 28-Dec. 1, 1943)

The President of the United States of America, the Premier of the Union of Soviet Socialist Republics, and the Prime Minister of the United Kingdom, have consulted with each other and with the Prime Minister of Iran, desire to declare the mutual agreement of their three Governments regarding relations with Iran.

The Governments of the United States of America, the Union of Soviet Socialist Republics and the United Kingdom recognize the assistance which Iran has given in the prosecution of the war against the common enemy, particularly by facilitating transportation of supplies from overseas to the Soviet Union. The three Governments realize that the war has caused special economic difficulties for Iran and they are agreed that they will continue to make available to the Government of Iran such economic assistance as may be possible, having regard to the heavy demands made upon them by their worldwide military operations and to the worldwide shortage of transport, raw materials and supplies for civilian consumption.

With respect to the post-war period, the Governments of the United States of America, the Union of Soviet Socialist Republics and the United Kingdom are in accord with the Government of Iran that any economic problem confronting Iran at the close of hostilities should receive full consideration along with those of the other members of the United Nations by conferences or international agencies held or created to deal with international economic matters.

The Governments of the United States of America, the Union of Soviet Socialist Republics and the United Kingdom are at one with the Government of Iran in their desire for the maintenance of the independence, sovereignty and territorial integrity of Iran. They count upon the participation of Iran together with all other peace-loving nations in the establishment of international peace, security and prosperity after the war in accordance with the principles of the Atlantic Charter, to which all four governments have continued to subscribe.

The Yalta Conference

Important provisions of the Conference, which was held Feb. 4-11, 1945:

The Occupation and Control of Germany

We have agreed on common policies and plans for enforcing the unconditional surrender terms which we shall impose together on Nazi Germany after German armed resistance has been finally crushed. These terms will not be made known until the final defeat of Germany has been accomplished. Under the agreed plan, the forces of the three powers will each occupy a separate zone of Germany. Coordinated administration and control has been provided for under the plan through a central Control Commission, consisting of

the supreme commanders of the three powers, with headquarters in Berlin. It has been agreed that France should be invited by the three powers, if she should so desire, to take over a zone of occupation, and to participate as a fourth member of the Control Commission. The limits of the French zone will be agreed upon by the four Governments concerned through their representatives on the European Advisory Commission.

It is our inflexible purpose to destroy German militarism and nazism and to ensure that Germany will never again be able to disturb the peace of the world. We are determined to disarm and disband all

German armed forces; break up for all time the German General Staff that has repeatedly contrived the resurgence of German militarism; remove or destroy all German military equipment; eliminate or control all German industry that could be used for military production; bring all war criminals to just and swift punishment and exact reparation in kind for the destruction wrought by the Germans; wipe out the Nazi Party, Nazi laws, organizations, and institutions, remove all Nazi and militarist influences from public office and from the cultural and economic life of the German people; and take in harmony such other measures in Germany as may be necessary to the future peace and safety of the world. It is not our purpose to destroy the people of Germany, but only when nazism and militarism have been extirpated will there be hope for a decent life for Germans, and a place for them in the comity of nations.

Terms Under Which Russia Entered the War Against Japan

The leaders of the Three Great Powers—the Soviet Union, the United States of America and Great Britain—have agreed that in two or three months after Germany has surrendered and the war in Europe has terminated the Soviet Union shall enter into the war against Japan on the side of the Allies on condition that:

1. The status quo in Outer Mongolia (The Mongolian People's Republic) shall be preserved;

2. The former rights of Russia violated by the treacherous attack of Japan in 1904 shall be restored, viz.:

- (a) the southern part of Sakhalin as well as all the islands adjacent to it shall be returned to the Soviet Union,

- (b) the commercial port of Dairen shall be internationalized, the preeminent interests of the Soviet Union in this port being safeguarded and the lease of Port Arthur as a naval base of the U.S.S.R. restored,

- (c) the Chinese-Eastern Railroad and the South-Manchurian Railroad which provides an outlet to Dairen shall be jointly operated by the establishment of a joint Soviet-Chinese Company, it being understood that the preeminent interests of the Soviet Union shall be safeguarded and that China shall retain full sovereignty in Manchuria;

3. The Kurile Islands shall be handed over to the Soviet Union.

It is understood, that the agreement concerning Outer Mongolia and the ports and railroads referred to above will require concurrence of Generalissimo Chiang Kai-shek. The President will take measures in order to obtain this concurrence on advice from Marshal Stalin.

The Heads of the Three Great Powers have agreed that these claims of the Soviet Union shall be unquestionably fulfilled after Japan has been defeated.

For its part the Soviet Union expresses its readiness to conclude with the National Government of China a pact of friendship and alliance between the U.S.S.R. and China in order to render assistance to China with its armed forces for the purpose of liberating China from the Japanese yoke.

The Potsdam Declaration

Text of the declaration issued at Potsdam, Germany, July 26, 1945, outlining the terms under which Japan would be allowed to surrender:

1. We, the President of the United States, the President of the national government of the Republic of China and the Prime Minister of Great Britain, representing the hundreds of millions of our countrymen, have conferred and agreed that Japan shall be given the opportunity to end this war.

2. The prodigious land, sea, and air forces of the United States, the British Empire and China, many times reinforced by their armies and air fleets from the west, are poised to strike the final blow at Japan. This military power is sustained and inspired by the determination of all allied nations to prosecute the war against Japan until she ceases to resist.

3. The result of the futile and senseless German resistance to the might of the aroused free peoples of the world stands forth in awful clarity as an example to the people of Japan.

The might that now converges on Japan is immeasurably greater than that which, when applied to the resisting Nazis, necessarily laid waste to the land, the industry, and the method of life of the whole German people.

The full application of our military power, backed by our resolve, will mean the inevitable and complete destruction of the Japanese armed forces and just as inevitably the utter devastation of the Japanese homeland.

4. The time has come for Japan to decide whether she will continue to be controlled by these self-willed militaristic advisers whose unintelligent calculations have brought the empire of Japan to the threshold of annihilation, or whether she will follow the path of reason.

5. The following are our terms: we will not deviate from them; there are no alternatives; we shall brook no delay.

6. There must be eliminated for all time the authority and influence of those

who have deceived and misled the people of Japan into embarking on world conquest, for we insist that a new order of peace, security, and justice will be impossible until irresponsible militarism is driven from the world.

7. Until such a new order is established and until there is convincing proof that Japan's war-making power is destroyed, points in Japanese territory to be designated by the Allies shall be occupied to secure the achievement of the basic objectives we are here setting forth.

8. The terms of the Cairo declaration shall be carried out and Japanese sovereignty shall be limited to the Islands of Honshu, Hokkaido, Kyushu, Shikoku and such minor islands as we determine.

9. Japanese military forces after being completely disarmed shall be permitted to return to their homes with the opportunity to lead peaceful and productive lives.

10. We do not intend that the Japanese shall be enslaved as a race or destroyed as a nation, but stern justice shall be meted out to all war criminals, including those who have visited cruelties upon our prisoners.

The Japanese government shall remove all obstacles to the revival and strength-

ening of democratic tendencies among the Japanese people. Freedom of speech and religion and of thought, as well as respect for the fundamental human rights, shall be established.

11. Japan shall be permitted to maintain such industries as will sustain her economy and permit the payment of just reparation in kind, but not those industries which will enable her to rearm for war.

To this end, access to, as distinguished from control of, raw materials shall be permitted. Eventual Japanese participation in world trade relations shall be permitted.

12. The occupying forces of the Allies shall be withdrawn from Japan as soon as these objectives have been accomplished and there has been established in accordance with the freely expressed will of the Japanese people a peacefully inclined and responsible government.

13. We call upon the government of Japan to proclaim now the unconditional surrender of all Japanese armed forces and to provide proper and adequate assurances of their good faith in such action. The alternative for Japan is prompt and utter destruction.

North Atlantic Treaty

Signed at Washington, D.C., April 4, 1949

The Parties to this Treaty reaffirm their faith in the purposes and principles of the Charter of the United Nations and their desire to live in peace with all peoples and all governments.

They are determined to safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law.

They seek to promote stability and well-being in the North Atlantic area.

They are resolved to unite their efforts for collective defense and for the preservation of peace and security.

They therefore agree to this North Atlantic Treaty:

Article 1

The Parties undertake, as set forth in the Charter of the United Nations, to settle any international disputes in which they may be involved by peaceful means in such a manner that international peace and security, and justice, are not endangered, and to refrain in their international relations from the threat or use of force in any manner inconsistent with the purposes of the United Nations.

Article 2

The Parties will contribute toward the further development of peaceful and friendly international relations by strength-

ening their free institutions, by bringing about a better understanding of the principles upon which these institutions are founded, and by promoting conditions of stability and well-being. They will seek to eliminate conflict in their international economic policies and will encourage economic collaboration between any or all of them.

Article 3

In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.

Article 4

The Parties will consult together whenever, in the opinion of any of them, the territorial integrity, political independence or security of any of the Parties is threatened.

Article 5

The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all; and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defense recognized by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith,

individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security.

Article 6

For the purpose of Article 5 an armed attack on one or more of the Parties is deemed to include an armed attack on the territory of any of the Parties in Europe or North America, on the Algerian departments of France, on the occupation forces of any Party in Europe, on the islands under the jurisdiction of any Party in the North Atlantic area north of the Tropic of Cancer or on the vessels or aircraft in this area of any of the Parties.

Article 7

This Treaty does not affect, and shall not be interpreted as affecting, in any way the rights and obligations under the Charter of the Parties which are members of the United Nations, or the primary responsibility of the Security Council for the maintenance of international peace and security.

Article 8

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third state is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

Article 9

The Parties hereby establish a council, on which each of them shall be represented, to consider matters concerning the implementation of this Treaty. The council shall be so organized as to be able to meet promptly at any time. The council shall set up such subsidiary bodies as may be necessary; in particular it shall establish immediately a defense committee which shall recommend measures for the implementation of Articles 3 and 5.

Article 10

The Parties may, by unanimous agreement, invite any other European state in a position to further the principles of this

Treaty and to contribute to the security of the North Atlantic area to accede to this Treaty. Any state so invited may become a party to the Treaty by depositing its instrument of accession with the Government of the United States of America. The Government of the United States of America will inform each of the Parties of the deposit of each such instrument of accession.

Article 11

This Treaty shall be ratified and its provisions carried out by the Parties in accordance with their respective constitutional processes. The instruments of ratification shall be deposited as soon as possible with the Government of the United States of America, which will notify all the other signatories of each deposit. The Treaty shall enter into force between the states which have ratified it as soon as the ratifications of the majority of the signatories, including the ratifications of Belgium, Canada, France, Luxemburg, the Netherlands, the United Kingdom and the United States, have been deposited and shall come into effect with respect to other states on the date of the deposit of their ratifications.

Article 12

After the Treaty has been in force for ten years, or at any time thereafter, the Parties shall, if any of them so requests, consult together for the purpose of reviewing the Treaty, having regard for the factors then affecting peace and security in the North Atlantic area, including the development of universal as well as regional arrangements under the Charter of the United Nations for the maintenance of international peace and security.

Article 13

After the Treaty has been in force for twenty years, any Party may cease to be a party one year after its notice of denunciation has been given to the Government of the United States of America, which will inform the Governments of the other Parties of the deposit of each notice of denunciation.

Article 14

This Treaty, of which the English and French texts are equally authentic, shall be deposited in the archives of the Government of the United States of America. Duly certified copies thereof will be transmitted by that Government to the Governments of the other signatories.

Tripartite Security Treaty

(United States, Australia, New Zealand)

Major provisions of the Tripartite agreement signed on Sept. 1, 1951, at San Francisco:

1. The parties undertake to settle by peaceful means any international disputes in which they may be involved.

2. The parties will maintain and develop their individual and collective capacity to resist armed attack.

3. The parties will consult together whenever the territorial integrity, political

independence or security of any of the parties is threatened in the Pacific.

4. Each party recognizes that an armed attack in the Pacific area on either of the other parties would be dangerous to its own peace and safety.

5. The parties hereby establish a council, consisting of their foreign ministers or their deputies, to consider matters concerning the implementation of this treaty.

6. This treaty shall remain in force indefinitely.

A Defense Treaty similar in its provisions to the Tripartite Security Treaty was signed by the United States and the Philippines in Washington, D. C., Aug 30, 1951.

United States-Japanese Treaty

Main provisions of the U. S.-Japanese Security Treaty signed at San Francisco on Sept. 8, 1951:

1. Japan grants and the U. S. accepts the right to dispose U. S. land, air and sea forces in and about Japan. Such forces may be utilized to contribute to the maintenance of international peace and security in the Far East and to the security of Japan against armed attack from without, including assistance given at the express request of the Japanese government to put down large scale riots and disturbances in Japan caused through instigation or intervention by an outside power or powers.

2. Japan will not grant without the prior consent of the U. S. any bases or any rights, powers or authority whatsoever relating to bases, or the right of garrison or maneuver or transit of ground, air or naval forces of any third power.

3. This treaty shall expire whenever in the opinion of the governments of the U. S. and of Japan, U. N. arrangements or alternate individual or collective dispositions satisfactorily provide for the maintenance of international peace and security in the Japan area.

Japanese Peace Treaty

The Japanese Peace Treaty was signed at San Francisco on September 8, 1951, by 49 nations; the U.S.S.R., Poland and Czechoslovakia were present but refused to sign. Among the major provisions of the treaty are the following:

Peace: The state of war between Japan and the Allies is terminated.

Sovereignty: Japan's full sovereignty is recognized as is its right to apply for U. N. membership.

Territory: Japan recognizes the independence of Korea; renounces all rights, titles or claims to Formosa, the Pescadores, the Kuriles, Sakhalin, the Pacific islands formerly under mandate to Japan, the Antarctic area, Spratly Island and the Paracels.

Japan agrees to U. N. trusteeship over the Ryukyu and Daito Islands, the Bonins, Rosario Island, the Volcano Islands, Parece Vela and Marcus Island. Disposition of Japanese property on these islands is to be negotiated by Japan and the administering authorities.

Security: Japan agrees to settle its international disputes peaceably, to refrain from the threat of or the use of force and to abide by the principles of the U. N.

All occupation forces are to be withdrawn as soon as possible but not later than 90 days after a majority of the sig-

natory countries have given notice of ratification of this treaty. Nothing in this provision shall, however, prevent the stationing or retention of foreign armed forces in Japanese territory by agreement with one or more of the Allies.

Political-Economic Clauses: Japan may enter into fisheries treaties; may negotiate most-favored-nation trade and maritime treaties with the Allies; renounces all special rights and interests in China.

Japan accepts the judgments of the International Military Tribunal and Allied War Crimes Courts.

Claims and Property: Japan recognizes its responsibility to pay reparations but the Allies recognize its limited economic capacity; therefore, Japan shall pay through goods to be manufactured in Japan from raw materials provided by the victimized nations and by services. The Allies may retain certain properties seized from Japan but require the latter to return their properties within 6 months. Japan recognizes Allied industrial, literary and artistic property rights. It agrees to indemnify prisoners of war who suffered unduly but renounces similar claims against the Allies.

Settlement of Disputes: Any disagreements arising out of the interpretation of this treaty and not otherwise settled shall be submitted to the International Court of Justice.

(For treaties not listed here, see index.)

★ WHO'S WHO ★

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Locations and dates are those of birth. A name in parentheses is the original name or form of the name of the individual.

The vital statistics offered in this section have been gathered from various sources, including the subjects thereof, but neither *Who's Who in America* nor the *Information Please Almanac* can guarantee the accuracy of each individual item. We have learned to accept the date and place of birth that any lady or gentleman claims for herself or himself and not argue about it. Where we have not been able to learn the date and place of birth, we have not attempted to invent the items.

- AARON, Hank** (Henry) (baseball player); Mobile, Ala., Feb. 5, 1934.
- ABBOTT, Bud** (William) (actor); Asbury Park, N. J., Oct. 2, 1898.
- ABBOTT, George** (director & dramatist); Forestville, N. Y., June 25, 1889.
- ABEL, Walter** (actor); St. Paul, Minn., June 6, 1898.
- ACHESON, Dean** (U. S. statesman); Middletown, Conn., Apr. 11, 1893.
- ADAMS, Franklin P.** (author); Chicago, Ill., Nov. 15, 1881.
- ADAMS, Samuel Hopkins** (novelist); Dunkirk, N. Y., Jan. 26, 1871.
- ADAMS, Sherman** (Asst. to Pres., U. S.); East Dover, Vt., Jan. 8, 1899.
- ADCOCK, Joe** (baseball player); Coushatta, La., Oct. 30, 1927.
- ADDAMS, Charles** (cartoonist); Westfield, N. J., Jan. 7, 1912.
- ADENAUER, Konrad** (Chancellor, Ger. Fed. Rep.); Cologne, Ger., Jan. 5, 1876.
- ADLER, Larry** (harmonica player); Baltimore, Md., Feb. 10, 1914.
- ADLER, Luther** (actor); New York City, May 4, 1903.
- ADLER, Mortimer J.** (philosopher); New York City, Dec. 28, 1902.
- AHERNE, Brian** (actor); Kings Norton, Eng., May 2, 1902.
- AIKEN, Conrad** (poet); Savannah, Ga., Aug. 5, 1889.
- ALBANESE, Licia** (soprano); Bari, It., July 22, 1913.
- ALBERT, Eddie** (Eddie Albert Heimberger) (actor); Rock Island, Ill., Apr. 22, 1908.
- ALDA, Robert** (actor); New York City, Feb. 26, 1914.
- ALDINGTON, Richard** (poet & novelist); Hampshire, Eng., 1892.
- ALDRICH, Winthrop W.** (U. S. diplomat); Providence, R. I., Nov. 2, 1885.
- ALI, Mohammed** (Pakistani statesman & diplomat); Barisal, E. Bengal, Oct. 19, 1909.
- ALLEN, Gracie** (comedienne); San Francisco, Calif., July 26, 1906.
- ALLEN, Mel** (sports announcer); Birmingham, Ala., Feb. 14, 1913.
- ALLEN, Steve** (comedian); New York City; Dec. 26, 1921.
- ALLYSON, June** (Jan Allyson) (actress); New York City, Oct. 7, 1923.
- ALSOP, Joseph W., Jr.** (journalist); Avon, Conn., Oct. 11, 1910.
- ALSOP, Stewart** (journalist); New York City, May 17, 1914.
- ALSTON, Walter** (baseball manager); Butler Co., Ohio, Dec. 1, 1911.
- AMECHE, Don** (actor); Kenosha, Wis., May 31, 1908.
- AMOROS, Sandy** (Edmundo) (baseball player); Matanzas, Cuba, Jan. 30, 1932.
- AMORY, Cleveland** (author); Nahant, Mass., Sept. 2, 1917.
- AMOS** (Freeman F. Gosden) (actor); Richmond, Va., May 5, 1899.
- ANDERSON, Eddie**. See Rochester.
- ANDERSON, Judith** (actress); Adelaide, Austr., Feb. 10, 1898.
- ANDERSON, Marian** (contralto); Philadelphia, Pa., Feb. 17, 1902.
- ANDERSON, Maxwell** (dramatist); Atlantic, Pa., Dec. 15, 1888.
- ANDERSON, Robert B.** (Secy. of Treas.); Burleson, Tex., June 4, 1910.
- ANDREWS, Dana** (actor); Collins, Miss., Jan. 1, 1912.
- ANDREWS, Julie** (Julia Wells) (actress); Walton-on-Thames, Eng., Oct. 1, 1935.
- ANDREWS, Roy Chapman** (zoologist & explorer); Beloit, Wis., Jan. 26, 1884.
- ANDY** (Charles J. Correll) (actor); Peoria, Ill., Feb. 2, 1890.
- ANGELI, Pier** (actress); Cagliari, It., June 19, 1932.
- ANTONELLI, Johnny** (baseball player); Rochester, N. Y., Apr. 12, 1930.
- ARCARO, Eddie** (jockey); Cincinnati, Ohio, Feb. 19, 1916.
- ARCHIPENKO, Alexander** (sculptor); Kiev, Rus., May 30, 1887.
- ARDEN, Eve** (Eunice Quedens) (actress); Mill Valley, Calif.

- ARLEN**, Harold (Hyman Arluck) (composer); Buffalo, N. Y., Feb. 15, 1905.
- ARMSTRONG**, Henry (boxer); St. Louis, Mo., Dec. 12, 1912.
- ARMSTRONG**, Louis (trumpeter); New Orleans, La., July 4, 1900.
- ARNAZ**, Desi (Desiderio) (actor & band leader); Santiago, Cuba, Mar. 2, 1917.
- ARNO**, Peter (cartoonist); New York City, Jan. 8, 1904.
- ARRAU**, Claudio (pianist); Chillán, Chile, Feb. 6, 1904.
- ARTHUR**, Jean (Gladys Greene) (actress); New York City, Oct. 17, 1908.
- ASHBURN**, Richie (baseball player); Tilden, Nebr., Mar. 19, 1927.
- ASTAIRE**, Fred (Frederick Austerlitz) (dancer & actor); Omaha, Neb., May 10, 1899.
- ATKINSON**, Brooks (drama critic); Melrose, Mass., Nov. 28, 1894.
- ATKINSON**, Ted (jockey); Toronto, Ont., Can., June 17, 1916.
- ATLEE**, Clement R. (British statesman); London, Eng., Jan. 3, 1883.
- AUDEN**, W. H. (Wystan Hugh Auden) (poet); York, Eng., Feb. 21, 1907.
- AUER**, Mischa (actor); Petrograd, Rus., Nov. 17, 1905.
- AUTRY**, Gene (actor); Tioga, Tex., Sept. 29, 1907.
- AYRES**, Lew (actor); Minneapolis, Minn., Dec. 28, 1908.
- BACALL**, Lauren (actress); New York City, Sept. 16, 1924.
- BACCALONI**, Salvatore (basso); Rome, It., Apr. 14, 1900.
- BACKHAUS**, Wilhelm (pianist); Leipzig, Ger., Mar. 26, 1884.
- BAER**, Max (boxer); Omaha, Nebr., Feb. 11, 1909.
- BAILEY**, Pearl (singer); Newport News, Va., Mar. 29, 1918.
- BAINTER**, Fay (actress); Los Angeles, Calif., 1893.
- BAKER**, Josephine (singer); St. Louis, Mo., 1907.
- BALANCHINE**, George (ballet director); St. Petersburg, Rus., Jan. 9, 1904.
- BALDWIN**, Faith (novelist); New Rochelle, N. Y., Oct. 1, 1893.
- BALL**, Lucille (actress); Jamestown, N. Y., Aug. 6, 1911.
- BANKHEAD**, Tallulah (actress); Huntville, Ala., Jan. 31, 1903.
- BANKS**, Ernie (baseball player); Dallas, Tex., Jan. 31, 1931.
- BANNISTER**, Roger (mile runner); Harrow, Eng., Mar. 24, 1929.
- BARBER**, Red (Walter L.) (sports announcer); Columbus, Miss., Feb. 17, 1908.
- BARBER**, Samuel (composer); West Chester, Pa., Mar. 9, 1910.
- BARBIROLLI**, Sir John (orchestra conductor); London, Eng., Dec. 2, 1899.
- BARKER**, Lex (actor); Rye, N. Y., May 8, 1919.
- BARRYMORE**, Ethel (actress); Philadelphia, Pa., Aug 15, 1879.
- BARTHELMESS**, Richard (actor); New York City, May 9, 1897.
- BARTHOLOMEW**, Freddie (actor); London, Eng., Mar. 28, 1924.
- BARTON**, James (actor); Gloucester, N. J., Nov. 1, 1890.
- BARUCH**, Bernard (financier); Camden, S. C., Aug. 19, 1870.
- BASIE**, Count (William) (band leader); Red Bank, N. J., Aug. 21, 1906.
- BATCHELOR**, Clarence Daniel (cartoonist); Osage City, Kans.
- BATISTA y ZALDÍVAR**, Fulgencio (Cuban statesman); Banés, Cuba, Jan. 16, 1901.
- BAUDOUIN** (King, Belgium); Palace of Laeken, Belg., Sept. 7, 1930.
- BAUER**, Hank (Henry) (baseball player); E. St. Louis, Ill., July 31, 1922.
- BAUGH**, Sammy (football coach); Temple, Tex., Mar. 17, 1914.
- BAUM**, Vicki (novelist); Vienna, Aus., Jan. 24, 1896.
- BAXTER**, Anne (actress); Michigan City, Ind., May 7, 1923.
- BAZIOTES**, William (painter); Pittsburgh, Pa., June 11, 1912.
- BECK**, David (labor leader); Stockton, Calif., June 16, 1894.
- BEEBE**, William (zoologist); Brooklyn, N. Y., July 29, 1877.
- BEECHAM**, Sir Thomas (orchestra conductor); St. Helens, Eng., Apr. 29, 1879.
- BEGLEY**, Ed (Edward) (actor); Hartford, Conn., Mar. 25, 1901.
- BEHRMAN**, S. N. (Samuel N.) (dramatist); Worcester, Mass., June 9, 1893.
- BELAFONTE**, Harry (singer); New York City, Mar. 1, 1927.
- BELLAMY**, Ralph (actor); Chicago, Ill., June 17, 1905.
- BEMELMANS**, Ludwig (essayist); Meran, Tirol, Apr. 27, 1898.
- BENDIX**, William (actor); New York City, Jan. 14, 1906.
- BEN-GURION**, David (Israeli statesman); Plónsk, Pol., Oct. 16, 1886.
- BENNETT**, Joan (actress); Palisades, N. J., Feb. 27, 1910.
- BENNETT**, Robert Russell (composer); Kansas City, Mo., June 15, 1894.
- BENNY**, Jack (Benny Kubelsky) (comedian); Waukegan, Ill., Feb. 14, 1894.
- BENSON**, Ezra Taft (Secy. of Agriculture, U. S.); Whitney, Idaho, Aug. 4, 1899.
- BENTON**, Thomas Hart (painter); Neosho, Mo., Apr. 15, 1889.
- BERGEN**, Edgar (ventriloquist); Chicago, Ill., Feb. 16, 1903.
- BERGMAN**, Ingrid (actress); Stockholm, Swed., 1917.
- BERKSON**, Seymour (publisher); Chicago, Ill., Jan. 30, 1905.
- BERLE**, Milton (Milton Berlinger) (comedian); New York City, July 12, 1908.
- BERLIN**, Irving (Isidore Baline) (song writer); Temum, Russia, May 11, 1888.
- BERLIN**, Richard E. (publisher); Omaha, Nebr., Jan. 18, 1894.
- BERNSTEIN**, Leonard (composer & conductor); Lawrence, Mass., Aug. 25, 1918.
- BERRA**, Yogi (Lawrence) (baseball player); St. Louis, Mo., May 12, 1925.
- BERRYMAN**, James T. (cartoonist); Washington, D. C., June 8, 1902.

- BEST**, Edna (actress); Hove, Sussex, Eng., Mar. 3, 1900.
- BETTIS**, Valerie (actress & dancer); Houston, Tex., Dec. 20, 1919.
- BEVAN**, Aneurin (British Labour leader); Tredegar, Eng., Nov. 1897.
- BICKFORD**, Charles (actor); Cambridge, Mass.
- BING**, Rudolf (opera executive); Vienna, Aus., Jan. 9, 1902.
- BJOERLING**, Jussi (tenor); Stora Tuna Dalarna, Swed., Feb. 2, 1911.
- BLACK**, Hugo L. (U. S. jurist); Harlan, Ala., Feb. 27, 1886.
- BLACKMER**, Sidney (actor); Salisbury, N. C., July 13, 1898.
- BLAIK**, Earl H. (football coach); Detroit, Mich., Feb. 15, 1897.
- BLAINE**, Vivian (actress); Newark, N. J., Nov. 21, 1921.
- BLITZSTEIN**, Marc (composer); Philadelphia, Pa., Mar. 2, 1905.
- BLOCH**, Ernest (composer); Geneva, Switz., July 24, 1880.
- BLOOM**, Claire (actress); London, Eng., Feb. 15, 1931.
- ELYTH**, Ann (actress); Mt. Kisco, N. Y., Aug. 16, 1928.
- BOHLEN**, Charles E. (writer, former Ambass. to USSR); Clayton, N. Y., Aug. 30, 1904.
- BOHR**, Niels (physicist); Copenhagen, Den., Oct. 7, 1885.
- BOLGER**, Ray (actor); Dorchester, Mass., Jan. 10, 1906.
- BOONE**, Pat (Charles) (singer); Jacksonville, Fla., June 1, 1934.
- BOONE**, Richard (actor); Los Angeles, California.
- BOOTH**, Shirley (Thelma Booth Ford) (actress); New York City, Aug. 30, 1907.
- BORGE**, Victor (pianist & comedian); Copenhagen, Den., Jan. 3, 1909.
- BORGNE**, Ernest (actor); Hamden, Conn., Jan. 24, 1917.
- BORI**, Lucrezia (Lucrecia Borja González de Riancho) (soprano); Valencia, Sp., Dec. 24, 1887.
- BORZAGE**, Frank (movie director); Salt Lake City, Utah, Apr. 23, 1893.
- BOSWELL**, Connie (singer); New Orleans, La., Dec. 3.
- BOUDREAU**, Lou (baseball manager); Harvey, Ill., July 17, 1917.
- BOWEN**, Catherine Drinker (biographer); Haverford, Pa., Jan. 1, 1897.
- BOWEN**, Elizabeth (novelist); Dublin, Ire., June 7, 1899.
- BOWLES**, Chester (former Ambass. to India); Springfield, Mass., Apr. 5, 1901.
- BOWLES**, Paul (novelist); New York City, Dec. 30, 1910.
- BOYD**, William (actor); Cambridge, Ohio, June 5, 1898.
- BOYER**, Charles (actor); Figeac, Fr., Aug. 28, 1899.
- BOYER**, Ken (baseball player); Liberty, Mo., May 20, 1931.
- BOYLE**, Kay (novelist & poet); St. Paul, Minn., Feb. 19, 1903.
- BRACKEN**, Eddie (actor); Astoria, N. Y., Feb. 7, 1920.
- BRADDOCK**, James J. (boxer); North Bergen, N. J., Dec. 6, 1905.
- BRADLEY**, Omar N. (U. S. general); Clark, Mo., Feb. 12, 1893.
- BRAGAN**, Bob (baseball manager); Birmingham, Ala., Oct. 20, 1917.
- BRAILOWSKY**, Alexander (pianist); Kiev, Russ., Feb. 16, 1896.
- BRANDO**, Marlon (actor); Omaha, Nebr., Apr. 3, 1924.
- BRAQUE**, Georges (painter); Argenteuil, Fr., May 13, 1882.
- BRAZZI**, Rossano (actor); Bologna, It., Sept. 18, 1916.
- BRENNAN**, Walter (actor); Lynn, Mass., July 25, 1894.
- BRENNAN**, William J., Jr. (U. S. jurist); Newark, N. J., Apr. 25, 1906.
- BRISCOE**, Robert (Irish statesman); Dublin, Ire., Sept. 25, 1894.
- BRITTEN**, Benjamin (composer); Lowestoft, Eng., Nov. 22, 1913.
- BROOK**, Alexander (painter); Brooklyn, N. Y., July 14, 1898.
- BROOKS**, Van Wyck (literary critic); Plainfield, N. J., Feb. 16, 1886.
- BROWN**, Cecil (radio commentator); New Brighton, Pa., Sept. 14, 1907.
- BROWN**, Joe E. (actor); Holgate, Ohio, July 28, 1892.
- BROWN**, John Mason (drama critic); Louisville, Ky., July 3, 1900.
- BROWN**, Pamela (actress); London, Eng., July 8, 1918.
- BROWN**, Vanessa (Smylla Brind) (actress); Vienna, Aus., Mar. 24, 1928.
- BROWNELL**, Herbert, Jr. (Attorney General, U. S.); Peru, Nebr., Feb. 20, 1904.
- BRUNDAGE**, Avery (sports executive); Detroit, Mich., Sept. 28, 1887.
- BRYNNER**, Yul (actor); Sakhalin (an island off Japan), July 11, 1917.
- BRYSON**, Lyman (educator); Valentine, Nebr., July 12, 1888.
- BUCK**, Pearl S. (novelist); Hillsboro, W. Va., June 26, 1892.
- BUDGE**, J. Donald (tennis player); Oakland, Calif., June 13, 1915.
- BUHL**, Bob (baseball player); Saginaw, Mich., Aug. 12, 1928.
- BULGANIN**, Nikolai A. (Soviet statesman); Nizhni-Novgorod, Russ., June 11, 1895.
- BURCHFIELD**, Charles E. (watercolorist); Ashtabula, Ohio, Apr. 9, 1893.
- BURDETTE**, Lou (baseball player); Nitro, W. Va., Nov. 22, 1926.
- BURKE**, Adm. Arleigh A. (Ch. of Naval Oper., U. S.); Boulder, Colo., Oct. 19, 1901.
- BURKE**, Billie (actress); Washington, D. C., Aug. 7, 1886.
- BURNS**, George (Nathan Birnbaum) (comedian); New York City, Jan. 20, 1896.
- BURROWS**, Abe (playwright & producer); New York City, Dec. 18, 1910.
- BURTON**, Harold H. (U. S. jurist); Jamaica Plain, Mass., June 29, 1888.
- BURTON**, Richard (actor); Wales, 1926.
- BUSH**, Vannevar (engineer); Everett, Mass., Mar. 11, 1890.
- BUTLER**, Richard Austen (British statesman); Attock Seral, India, Dec. 9, 1902.

- BUTTONS**, Red (Aaron Chwatt) (comedian); New York City, Feb. 5, 1919.
- BYINGTON**, Spring (actress); Colorado Springs, Colo., Oct. 17, 1898.
- CABELL**, James Branch (novelist); Richmond, Va., Apr. 14, 1879.
- CADMUS**, Paul (painter & etcher); New York City, Dec. 17, 1904.
- CAESAR**, Sid (comedian); Yonkers, N. Y., Sept. 8, 1922.
- CAGNEY**, James (actor); New York City, July 17, 1904.
- CAIN**, James M. (novelist); Annapolis, Md., July 1, 1892.
- CALDER**, Alexander ("mobile" sculptor); Lawnton, Pa., July 22, 1898.
- CALDWELL**, Erskine (novelist); White Oak, Ga., Dec. 17, 1903.
- CALDWELL**, Taylor (novelist); Preswick, Eng., Sept. 7, 1900.
- CALHOUN**, Rory (Francis Durgin) (actor); Los Angeles, Calif., Aug. 8, 1923.
- CALLAS**, Maria (soprano); New York City, Dec. 4, 1923.
- CALLOWAY**, Cab (band leader); Rochester, N. Y., Dec. 25, 1907.
- CAMPANELLA**, Roy (baseball player); Homestead, Pa., Nov. 19, 1921.
- CAMUS**, Albert (novelist); Algiers, 1913.
- CANBY**, Henry Seidel (literary critic); Wilmington, Del., Sept. 6, 1878.
- CANIFF**, Milton (cartoonist); Hillsboro, Ohio, Feb. 28, 1907.
- CANOVA**, Judy (actress); Jacksonville, Fla., Nov. 20, 1916.
- CANTOR**, Eddie (Edward Iskowitz) (comedian); New York City, Jan. 31, 1892.
- CAPOTE**, Truman (novelist); New Orleans, La., Sept. 30, 1924.
- CAPP**, Al (cartoonist); New Haven, Conn., Sept. 28, 1909.
- CAPRA**, Frank (movie director); Palermo, Sicily, May 18, 1897.
- CAREY**, MacDonald (actor); Sioux City, Iowa, Mar. 15, 1913.
- CARLE**, Frankie (pianist); Providence, R. I., Mar. 15, 1903.
- CARLSON**, Richard (actor); Albert Lea, Minn., Apr. 29, 1912.
- CARMICHAEL**, Hoagy (song writer); Bloomington, Ind., Nov. 22, 1899.
- CARNEY**, Art (actor); Mt. Vernon, N. Y.
- CARNOVSKY**, Morris (actor); St. Louis, Mo., 1898.
- CARON**, Leslie (actress); Paris, Fr., July 1, 1931.
- CARRADINE**, John (actor); New York City, Feb. 5, 1906.
- CARROLL**, John (painter); Wichita, Kans., Aug. 14, 1892.
- CARROLL**, Leo G. (actor); Weedon, Eng.
- CARROLL**, Paul Vincent (dramatist); Dundalk, Ire., July 10, 1900.
- CARSON**, Jack (actor); Carman, Can., Oct. 27, 1910.
- CARSON**, Rachel (science writer); Springdale, Pa., May 27, 1907.
- CASADESUS**, Robert (pianist); Paris, Fr., Apr. 7, 1899.
- CASALS**, Pablo (cellist); Vendrell, Sp., Dec. 29, 1876.
- CAVALLERO**, Carmen (band leader); New York City, May 6, 1913.
- CHAGALL**, Marc (painter); Vitebsk, Rus., July 7, 1887.
- CHAMPION**, Gower (dancer & actor); Geneva, Ill., June 22, 1921.
- CHAMPION**, Marge (dancer & actress); Los Angeles, Calif., Sept. 2, 1923.
- CHANDLER**, Jeff (Ira Grossel) (actor); Brooklyn, N. Y., Dec. 15, 1918.
- CHANNING**, Carol (comedienne); Seattle, Wash., Jan. 31, 1921.
- CHAPLIN**, Charles (comedian); London, Eng., Apr. 16, 1889.
- CHARISSE**, Cyd (Tula Finklea) (actress, dancer); Amarillo, Tex., Mar. 8, 1923.
- CHARLOTTE** (Grand Duchess of Luxembourg); Chateau de Berg, Luxemburg, Jan. 23, 1896.
- CHASE**, Ilka (actress); New York City, Apr. 8, 1905.
- CHASE**, Stuart (writer); Somersworth, N. H., Mar. 8, 1888.
- CHAVEZ**, Carlos (composer); near Mexico City, Mex., June 13, 1899.
- CHEVALIER**, Maurice (actor); Paris, Fr., Sept. 12, 1888.
- CHIANG Kai-shek** (President, Nat. China); Feng-hwa, China, Oct. 31, 1887.
- CHIRICO**, Giorgio de (painter); Voios, Gr., July 10, 1888.
- CHOU En-lai** (Premier, Comm. China); Hualyin, China, 1898.
- CHRISTIAN**, Linda (actress); Tampico, Mex., 1925.
- CHRISTIE**, Agatha (novelist); Torquay, Eng., 1892.
- CHURCHILL**, Sarah (actress); London, Eng., Oct. 7, 1914.
- CHURCHILL**, Sir Winston S. (British statesman); Oxfordshire, Eng., Nov. 30, 1874.
- CLAIR**, René (René Chomette) (movie director); Paris, Fr., Nov. 11, 1898.
- CLAIRE**, Ina (Ina Fagan) (actress); Washington, D. C., Oct. 15, 1892.
- CLARK**, Bobby (comedian); Springfield, Ohio, June 16, 1888.
- CLARK**, Dane (actor); New York City, Feb. 18, 1915.
- CLARK**, Thomas C. (U. S. jurist); Dallas, Tex., Sept. 23, 1899.
- CLIFT**, Montgomery (actor); Omaha, Nebr., Oct. 17, 1920.
- CLOETE**, Stuart (novelist); Paris, Fr., July 23, 1897.
- CLOONEY**, Rosemary (singer); Maysville, Ky., May 23, 1928.
- CLURMAN**, Harold (stage director); New York City, Sept. 18, 1901.
- COBB**, Lee J. (actor); New York City, Dec. 8, 1911.
- COBB**, Ty (Tyrus R.) (baseball player); Banks Co., Ga., Dec. 17, 1886.
- COBURN**, Charles (actor); Savannah, Ga., June 19, 1877.
- COCA**, Imogene (comedienne); Philadelphia, Pa.
- COCTEAU**, Jean (poet & dramatist); Maisons-Laffitte, Fr., July 5, 1891.
- COLBERT**, Claudette (Lily Chauchoin) (actress); Paris, Fr., Sept. 13, 1905.

- COLE**, Nat King (Nathaniel Adams Coles) (singer); Montgomery, Ala., Mar. 17, 1919.
- COLLINGE**, Patricia (actress); Dublin, Ire., Sept. 20, 1894.
- COLMAN**, Ronald (actor); Richmond, Eng., Feb. 9, 1891.
- COMMAGER**, Henry S. (historian); Pittsburgh, Pa., Oct. 25, 1902.
- COMO**, Perry (Pierino) (singer); Canonsburg, Pa., May 18, 1913.
- COMPTON**, Arthur H. (physicist); Wooster, Ohio, Sept. 10, 1892.
- CONANT**, James B. (scientist & educator); Dorchester, Mass., Mar. 26, 1893.
- CONLEY**, Donald (baseball player); Muskogee, Okla., Nov. 10, 1930.
- CONNELLY**, Marc (dramatist); McKeesport, Pa., Dec. 13, 1890.
- CONNOLLY**, Maureen (tennis player); San Diego, Calif., Sept. 17, 1934.
- CONROY**, Frank (actor); Derby, Eng., Oct. 14, 1890.
- CONTE**, Richard (actor); New York City, Mar. 24, 1914.
- COOGAN**, Jackie (actor); Los Angeles, Calif., Oct. 26, 1914.
- COOK**, Donald (actor); Portland, Oreg., Sept. 26, 1901.
- COOKE**, Alistair (news commentator); Manchester, Eng., Nov. 20, 1908.
- COOPER**, Gary (Frank) (actor); Helena, Mont., May 7, 1901.
- COOPER**, Jackie (actor); Los Angeles, Calif., Sept. 15, 1922.
- COPLAND**, Aaron (composer); Brooklyn, N. Y., Nov. 14, 1900.
- COREY**, Wendell (actor); Dracut, Mass., Mar. 20, 1914.
- CORNELL**, Katharine (actress); Berlin, Ger., Feb. 16, 1898.
- CORRELL**, Charles J. *See* Andy
- COSTAIN**, Thomas Bertram (novelist); Brantford, Ont., Can., May 8, 1885.
- COSTELLO**, Lou (Louis Cristillo) (actor); Paterson, N. J., Mar. 6, 1908.
- COTTEN**, Joseph (actor); Petersburg, Va., 1905.
- COTY**, René (Pres., France), Le Havre, Fr., Mar. 20, 1882.
- COWARD**, Noel (dramatist & actor); Teddington, Eng., Dec. 16, 1899.
- COWLES**, Gardner (publisher); Algona, Iowa, Jan. 31, 1903.
- COWLEY**, Malcolm (critic & editor); Bel-sane, Pa., Aug. 24, 1898.
- COX**, Wally (Wallace Maynard Cox) (comedian); Detroit, Mich., Dec. 6, 1924.
- COZZENS**, James Gould (novelist); Chicago, Ill., Aug. 19, 1903.
- CRAIN**, Jeanne (actress); Barstow, Calif., May 25, 1925.
- CRAWFORD**, Broderick (actor); Philadelphia, Pa., Dec. 9, 1911.
- CRAWFORD**, Joan (Lucille LeSueur) (actress); San Antonio, Tex., Mar. 23, 1908.
- CRONIN**, A. J. (Archibald J. Cronin) (novelist); Cardross, Scot., July 19, 1896.
- CRONIN**, Joe (baseball executive); San Francisco, Calif., Oct. 12, 1906.
- CRONYN**, Hume (actor); London, Ont., Can.
- CROSBY**, Bing (Harry) (actor & singer); Tacoma, Wash., May 2, 1904.
- CROSBY**, Bob (band leader & actor); Spokane, Wash., Aug. 23, 1913.
- CROSS**, Milton (radio announcer); New York City, Apr. 16, 1897.
- CROTHERS**, Rachel (dramatist); Bloomington, Ill., Dec. 12, 1878.
- CROUSE**, Russel (dramatist); Findlay, Ohio, Feb. 20, 1893.
- CUGAT**, Xavier (orchestra leader); Barcelona, Sp., Jan. 1, 1900.
- CUKOR**, George (movie director); New York City, July 7, 1899.
- CUMMINGS**, E. E. (Edward Estlin Cummings) (poet); Cambridge, Mass., Oct. 14, 1894.
- CUMMINGS**, Robert (actor); Joplin, Mo., June 9, 1910.
- CURTICE**, Harlow H. (industrialist); Easton Rapids, Mich., Aug. 15, 1893.
- CURTIS**, Tony (actor); New York City, June 3, 1925.
- CURTIZ**, Michael (movie director); Budapest, Hung., Dec. 24, 1888.
- CURZON**, Clifford (pianist); London, Eng., May 18, 1907.
- DAHL**, Arlene (actress); Minneapolis, Minn., Aug. 11.
- DAILEY**, Dan (actor); New York City.
- DALI**, Salvador (painter); Figueras, Sp., May 11, 1904.
- DALY**, John (news commentator); Johannesburg, S. Afr., Feb. 20, 1914.
- DAMONE**, Vic (singer); Brooklyn, N. Y., June 12, 1928.
- DANDRIDGE**, Dorothy (actress); Cleveland, Ohio.
- DANIELS**, Billy (singer); Jacksonville, Fla., Sept. 14, 1912.
- DANILOVA**, Alexandra (dancer); Peterhof, Rus.
- DARCEL**, Denise (actress); Paris, Fr., 1926.
- DARK**, Alvin (baseball player); Comanche, Okla., Jan. 7, 1923.
- DARNELL**, Linda (actress); Dallas, Tex.
- DARRIEUX**, Danielle (actress); Bordeaux, Fr., May 1, 1917.
- DAVIES**, Marion (actress); New York City, Jan. 1, 1900.
- DAVIS**, Bette (actress); Lowell, Mass., Apr. 5, 1908.
- DAVIS**, Elmer (radio commentator); Aurora, Ind., Jan. 13, 1890.
- DAVIS**, Joan (actress); St. Paul, Minn., June 29, 1912.
- DAVIS**, Sammy, Jr. (singer); New York City, Jan. 1926.
- DAVIS**, Stuart (painter); Philadelphia, Pa., Dec. 7, 1894.
- DAY**, Dennis (singer); New York City, May 21, 1917.
- DAY**, Doris (Doris von Kappelhoff) (singer); Cincinnati, Ohio, Apr. 3, 1924.
- DAY**, Laraine (Loraine Johnson) (actress); Roosevelt, Utah, Oct. 13, 1920.
- DEAN**, Dizzy (Jay Hanna Dean) (baseball player); Lucas, Ark., Jan. 16, 1911.
- DE GAULLE**, Charles (French statesman); Lille, Fr., Nov. 22, 1890.
- DE HAVEN**, Gloria (actress); Los Angeles, Calif., July 23.
- DE HAVILLAND**, Olivia (actress); Tokyo, Jap., July 1, 1916.

- DEMARET, Jim (golfer); Houston, Tex., May 10, 1910.
- de MILLE, Agnes (choreographer); New York City.
- de MILLE, Cecil B. (movie director); Ashfield, Mass., Aug. 12, 1881.
- DEMPSEY, Jack (William H.) (boxer); Manassa, Colo., June 24, 1894.
- DERAIN, André (painter); Chatou, Fr., June 10, 1880.
- DEREK, John (actor); Hollywood, Calif., Aug. 12, 1926.
- DE SICA, Vittorio (actor & movie director); Sora, It., July 7, 1901.
- DE VALERA, Eamon (Irish statesman); New York City, Oct. 14, 1882.
- DEVINE, Andy (actor); Flagstaff, Ariz., Oct. 7, 1905.
- DEWEY, Thomas E. (U. S. statesman); Owosso, Mich., Mar. 24, 1902.
- DE WILDE, Brandon (actor); New York City, Apr. 9, 1942.
- DICKSON, Murry (baseball player); Tracy, Mo., Aug. 21, 1916.
- DIETRICH, Marlene (Maria Magdalena von Losch) (actress); Berlin, Dec. 27, 1904.
- DILLARD, Harrison (hurdler); Cleveland, Ohio, July 8, 1923.
- DILLON, C. Douglas (U. S. diplomat); Geneva, Switz., Aug. 21, 1909.
- DIMAGGIO, Joe (baseball player); Martinez, Calif., Nov. 25, 1914.
- DIOR, Christian (fashion designer); Granville, Normandy, Fr., Jan. 21, 1905.
- DISNEY, Walt (animated cartoonist); Chicago, Ill., Dec. 5, 1901.
- DODDS, Harold Willis (educator); Utica, Pa., June 28, 1889.
- DOHNÁNYI, Ernst von (composer); Pressburg, Slovakia, July 27, 1877.
- DOLIN, Anton (dancer & choreographer); Slinfold, Sussex, Eng., July 27, 1904.
- DONAT, Robert (actor); Withington, Eng., Mar. 18, 1905.
- DONLEVY, Brian (actor); Portadown, Ire., Feb. 9, 1903.
- DONOVAN, Richard (baseball player); Quincy, Mass., Dec. 7, 1927.
- DORATI, Antal (orchestra conductor); Budapest, Hung., Apr. 9, 1906.
- DOS PASSOS, John (novelist); Chicago, Ill., Jan. 14, 1896.
- DOUGLAS, James H. (Chief of Staff, Air Force); Cedar Rapids, Iowa, Mar. 11, 1899.
- DOUGLAS, Kirk (Issur Danielovitch) (actor); Amsterdam, N. Y., Dec. 9, 1916.
- DOUGLAS, Melvyn (Melvyn Hesselberg) (actor); Macon, Ga., Apr. 5, 1901.
- DOUGLAS, Paul (actor); Philadelphia, Pa., Apr. 11, 1907.
- DOUGLAS, William O. (U. S. jurist); Maine, Minn., Oct. 16, 1898.
- DOWLING, Eddie (actor & director); Woonsocket, R. I., Dec. 9, 1894.
- DOWNY, Morton (singer); Wallingford, Conn., Nov. 14, 1902.
- DRAKE, Alfred (singer & actor); New York City, Oct. 7, 1914.
- DRAPER, Paul (dancer); Florence, It., Oct. 25, 1911.
- DRESSEN, Chuck (Charles) (baseball manager); Decatur, Ill., Sept. 20, 1898.
- DRUMMOND, Roscoe (journalist); Theresa, N. Y.
- DRYSDALE, Don (baseball player); Van Nuys, Calif., July 23, 1936.
- DUBINSKY, David (labor leader); Breslau, Litovsk, Pol., Feb. 22, 1892.
- DUCLOS, Jacques (French Communist leader); Louey, Fr., Oct. 2, 1896.
- DUFFY, Edmund (cartoonist); Jersey City, N. J., Mar. 1, 1899.
- DULLES, Allen W. (CIA Director, U. S.); Watertown, N. Y., Apr. 7, 1893.
- DULLES, John Foster (Secy. of State, U. S.); Washington, D. C., Feb. 25, 1888.
- DU MAURIER, Daphne, (novelist); London, Eng., May 13, 1907.
- DUNCAN, Todd (singer); Danville, Ky., Feb. 12, 1903.
- DUNHAM, Katherine (dancer); Chicago, Ill.
- DUNNE, Irene (actress); Louisville, Ky., Dec. 20, 1904.
- DUNNOCK, Mildred (actress); Baltimore, Md.
- DURANTE, Jimmy (comedian); New York City, Feb. 10, 1893.
- DURBIN, Deanna (Edna) (actress); Winnipeg, Can., Dec. 4, 1922.
- DUROCHER, Leo (former baseball manager); West Springfield, Mass., July 27, 1906.
- DYKES, Jimmie (baseball manager); Philadelphia, Pa., Nov. 10, 1896.
- EASTMAN, Max (social writer); Canandaigua, N. Y., Jan. 4, 1883.
- ECKSTINE, Billy (singer); Pittsburgh, Pa., July 8, 1914.
- EDDY, Nelson (baritone); Providence, R. I., June 29, 1901.
- EDEN, Sir Anthony (former Prime Minister, Gr. Brit.); England, June 12, 1897.
- EGLEVSKY, André (dancer); Moscow, Russia, Dec. 21, 1917.
- EISENHOWER, Dwight D. (President, U. S.); Denison, Tex., Oct. 14, 1890.
- EISENHOWER, Milton S. (educator); Abilene, Kans., Sept. 15, 1899.
- ELDRIDGE, Florence (Florence McKechnie) (actress); Brooklyn, N. Y., Sept. 5, 1901.
- ELIOT, T. S. (Thomas Stearns Eliot) (poet); St. Louis, Mo., Sept. 26, 1888.
- ELIZABETH II (Queen, Gr. Brit., etc.); London, Eng., Apr. 21, 1926.
- ELLINGTON, Duke (Edward) (band leader); Washington, D. C., Apr. 29, 1899.
- ELMAN, Mischa (violinist); Stalnoye, Russia, Jan. 20, 1891.
- EMERSON, Faye (actress); Elizabeth, N. J., July 8, 1917.
- EPSTEIN, Sir Jacob (sculptor); New York City, Nov. 10, 1880.
- ERSKINE, Carl (baseball player); Anderson, Ind., Dec. 13, 1926.
- EVANS, Dame Edith (actress); London, Eng., Feb. 8, 1888.
- EVANS, Maurice (actor); Dorchester, Eng., June 3, 1901.
- EWELL, Tom (Yewell Tompkins) (actor); Owensboro, Ky., Apr. 29, 1909.
- FABRAY, Nanette (Nanette Fabares) (actress); San Diego, Calif., Oct. 27, 1922.
- FADIMAN, Clifton (literary critic); Brooklyn, N. Y., May 15, 1904.

- FAIRBANKS, Douglas, Jr.**, (actor); New York City, Dec. 9, 1909.
- FAIRLESS, Benjamin F.** (industrialist); Pigeon Run, Ohio, May 3, 1890.
- FALKENBURG, Jinx** (Eugenia) (actress); Barcelona, Sp., Jan. 21, 1919.
- FAROUK I** (former King, Egypt); Cairo, Egy., Feb. 11, 1920.
- FARRAR, Geraldine** (soprano); Melrose, Mass., Feb. 28, 1882.
- FARRELL, Charles** (actor); Dublin, Ire., Aug. 6, 1905.
- FARRELL, James T.** (novelist); Chicago, Ill., Feb. 27, 1904.
- FAST, Howard** (novelist); New York City, Nov. 11, 1914.
- FAULKNER, William** (novelist); New Albany, Miss., Sept. 25, 1897.
- FAY, Frank** (actor); San Francisco, Calif., Nov. 17, 1897.
- FAYE, Alice** (Alice Leppert) (actress); New York City, May 5, 1915.
- FELLER, Bobby** (baseball player); Van Meter, Iowa, Nov. 3, 1918.
- FERBER, Edna** (novelist); Kalamazoo, Mich., Aug. 15, 1887.
- FERNANDEL** (Fernand Contandin) (actor); Marseille, France, May 8, 1903.
- FERRARESE, Don** (baseball player); Oakland, Calif., June 19, 1929.
- FERRER, Jose** (actor); Puerto Rico, 1909.
- FERRER, Mel** (actor); Elberon, N. J., Aug. 25, 1917.
- FEUCHTWANGER, Lion** (novelist); Munich, Ger., July 7, 1884.
- FIEDLER, Arthur** (orchestra conductor); Boston, Mass., Dec. 17, 1894.
- FIELD, Betty** (actress); Boston, Mass., Feb. 8, 1918.
- FIELD, Marshall, Jr.** (newspaperman); New York City, June 15, 1916.
- FIELDS, Gracie** (actress); Rochdale, Eng., Jan. 9, 1898.
- FISHER, Dorothy Canfield** (novelist); Lawrence, Kans., Feb. 17, 1879.
- FISHER, Eddie** (singer); Philadelphia, Pa., Aug. 10, 1928.
- FISHER, Geoffrey Francis** (Archbishop of Canterbury); Higham Rectory, Nuneaton, Eng., May 5, 1887.
- FITZGERALD, Barry** (William J. Shields) (actor); Dublin, Ire., Mar. 1888.
- FITZGERALD, Ella** (singer); Newport News, Va., Apr. 25, 1918.
- FITZGERALD, Geraldine** (actress); Dublin, Ire., Nov. 24, 1914.
- FITZSIMMONS, Sunny Jim** (horse trainer); Sheepshead Bay, N. Y., July 23, 1874.
- FLAGSTAD, Kirsten** (soprano); Hamar, Nor., July 12, 1895.
- FLEMING, Rhonda** (Marilyn Louis) (actress); Los Angeles, Calif., Aug. 10, 1923.
- FLYNN, Errol** (actor); Hobart, Tasmania, June 20, 1909.
- FOCH, Nina** (actress); Leyden, Neth., Apr. 20, 1924.
- FONDA, Henry** (actor); Grand Island, Nebr., May 16, 1905.
- FONTAINE, Joan** (actress); Tokyo, Jap., Oct. 22, 1917.
- FONTANNE, Lynn** (actress); London, Eng., 1887.
- FONTEYN, Dame Margot** (Margaret Hookham) (ballerina); Reigate, Eng., May 18, 1919.
- FORD, Glenn** (Gwyllyn Ford) (actor); Quebec, Can., May 1, 1922.
- FORD, Henry, II** (industrialist); Detroit, Mich., Sept. 4, 1917.
- FORD, John** (movie director); Cape Elizabeth, Maine, Feb. 1, 1895.
- FORD, Tennessee Ernie** (entertainer); Fordtown, Tenn., Feb. 13, 1919.
- FORD, Whitey** (Edward) (baseball player); New York City, Oct. 21, 1928.
- FORESTER, C. S.** (Cecil Scott Forester) (novelist); Cairo, Egypt, Aug. 27, 1899.
- FORSTER, E. M.** (Edward M.) (novelist); England, 1879.
- FORSYTHE, John** (actor); Penns Grove, N. J., Jan. 29, 1918.
- FOWLER, Gene** (biographer); Denver, Colo., 1890.
- FOX, Nellie** (Jacob Nelson Fox) (baseball player); St. Thomas, Pa., Dec. 25, 1927.
- FRANCESCATTI, Zino** (violinist); Marseille, Fr., Aug. 9, 1905.
- FRANCIS, Arlene** (Arlene Francis Kazanjian) (actress); Boston, Mass., 1908.
- FRANCO, Francisco** (Chief of State, Spain); El Ferrol, Sp., Dec. 4, 1892.
- FRANKEN, Rose** (dramatist & novelist); Gainesville, Tex., 1898.
- FRANKFURTER, Felix** (U. S. jurist); Vienna, Aus., Nov. 15, 1882.
- FRAWLEY, William** (actor); Burlington, Iowa, Feb. 26, 1893.
- FREDERICK IX** (King, Denmark); nr. Copenhagen, Den., Mar. 11, 1899.
- FREEMAN, Hershell** (baseball player); Gadsden, Ala., July 1, 1928.
- FRICK, Ford C.** (baseball executive); Wawaka, Ind., Dec. 19, 1894.
- FRIEND, Owen Lacey, Jr.** (baseball player); Granite City, Ill., Mar. 21, 1927.
- FRIEND, Robert** (baseball player); Lafayette, Ind., Mar. 24, 1930.
- FRIML, Rudolf** (composer); Prague, Czech., Dec. 7, 1884.
- FRISCH, Frank F.** (baseball player); New York City, Sept. 9, 1898.
- FROMAN, Jane** (singer); St. Louis, Mo., Nov. 10, 1911.
- FROST, Robert** (poet); San Francisco, Calif., Mar. 26, 1875.
- FRY, Christopher** (dramatist); Bristol, Eng., Dec. 18, 1907.
- FUNSTON, George Keith** (financial executive); Waterloo, Iowa, Oct. 12, 1910.
- FURILLO, Carl** (baseball player); Stony Creek Mills, Pa., Mar. 8, 1922.
- GABIN, Jean** (actor); Paris, Fr., May 17, 1904.
- GABLE, Clark** (actor); Cadiz, Ohio, Feb. 1, 1901.
- GAITSKELL, Hugh** (British statesman); London, Eng., Apr. 9, 1906.
- GALLICO, Paul** (author); New York City, July 26, 1897.
- GALLI-CURCI, Amelita** (soprano); Milan, It., Nov. 18, 1889.
- GALLUP, George H.** (public opinion statistician); Jefferson, Iowa, Nov. 18, 1901.

- GANNETT, Frank E. (publisher); Bristol, N. Y., Sept. 15, 1876.
- GANNETT, Lewis (literary critic); Rochester, N. Y., Oct. 3, 1891.
- GARBO, Greta (Greta Gustafsson) (actress); Stockholm, Swed., Sept. 18, 1905.
- GARCIA, Mike (baseball player); San Gabriel, Calif., Nov. 17, 1923.
- GARDEN, Mary (soprano); Aberdeen, Scot., Feb. 20, 1877.
- GARDINER, Reginald (actor); Wimbledon, Eng., Feb. 27, 1903.
- GARDNER, Ava (actress); Smithfield, North Carolina.
- GARDNER, Ed (Edward Poggenberg) (actor); Astoria, N. Y., June 29, 1905.
- GARDNER, Erle Stanley (novelist); Malden, Mass., July 17, 1889.
- GARGAN, William (actor); Brooklyn, N. Y., July 17, 1905.
- GARLAND, Judy (Frances Gumm) (actress); Grand Rapids, Minn., June 10, 1922.
- GARROWAY, Dave (comedian); Schnectady, N. Y., July 13, 1913.
- GARSON, Greer (actress); County Down, Ireland.
- GAXTON, William (Arturo Caxiola) (actor); San Francisco, Calif., Dec. 2, 1893.
- GAYNOR, Mitzi (actress); Chicago, Sept. 4.
- GEDDES, Barbara Bel (actress); New York City, Oct. 31, 1922.
- GEDDES, Norman Bel (stage designer); Adrian, Mich., Apr. 27, 1893.
- GEORGE, Grace (actress); New York City, Dec. 25, 1880.
- GERSHWIN, Ira (lyricist); New York City, Dec. 6, 1896.
- GIBSON, Althea (tennis player); Silver, S. C., Aug. 25, 1927.
- GIELGUD, Sir John (actor); London, Eng., Apr. 14, 1904.
- GIGLI, Beniamino (tenor); Rencanati, It., Mar. 20, 1890.
- GILELS, Emil (pianist); Odessa, Ukr., 1916.
- GILES, Warren (baseball executive); Tiskilwa, Ill., May 28, 1896.
- GIMBEL, Bernard F. (merchant); Vincennes, Ind., Apr. 10, 1885.
- GISH, Dorothy (actress); Massillon, Ohio, Mar. 11, 1898.
- GISH, Lillian (actress); Springfield, Ohio, Oct. 14, 1896.
- GLEASON, Jackie (actor); Brooklyn, N. Y., Feb. 26, 1916.
- GLEASON, James (actor); New York City, May 23, 1886.
- GOBEL, George (comedian); Chicago, Ill., May 20, 1920.
- GODDARD, Paulette (actress); Great Neck, N. Y., June 3, 1911.
- GODFREY, Arthur (entertainer); New York City, Aug. 31, 1903.
- GOLDBERG, Rube (Reuben) (cartoonist); San Francisco, Calif., July 4, 1883.
- GOLDWYN, Samuel (Samuel Goldfish) (movie producer); Warsaw, Pol., 1882.
- GOLSCHMANN, Vladimir (orchestra conductor); Paris, Fr., Dec. 16, 1893.
- GONZALEZ, Pancho (tennis player); Los Angeles, Calif., May 9, 1928.
- GOODMAN, Benny (clarinetist); Chicago, Ill., May 30, 1909.
- GOOSSENS, Eugene (orchestra conductor); London, Eng., May 26, 1893.
- GORDON, Max (play producer); New York City, 1892.
- GORDON, Ruth (actress); Wollaston, Mass., Oct. 30, 1896.
- GOSDEN, Freeman F. *See* Amos.
- GOULD, Chester (cartoonist); Pawnee, Okla., 1900.
- GOULD, Morton (composer); Richmond Hill, N. Y., Dec. 10, 1913.
- GRABLE, Betty (actress); St. Louis, Mo., Dec. 18, 1916.
- GRACE, Eugene G. (industrialist); Goshen, N. J., Aug. 27, 1876.
- GRAHAM, Billy (William F.) (evangelist); Charlotte, N. C., Nov. 7, 1918.
- GRAHAM, Martha (choreographer); Pittsburgh, Pa.
- GRAHAME, Gloria (Gloria Grahame Hollard) (actress); Los Angeles, Calif., Nov. 28, 1925.
- GRANGE, Red (Harold) (football player); Forksville, Pa., June 13, 1904.
- GRANGER, Stewart (James Stewart) (actor); May 6, 1913.
- GRANT, Cary (Archibald A. Leach) (actor); Bristol, Eng., Jan. 18, 1904.
- GRAVES, Robert (poet & novelist); London, Eng., July 26, 1895.
- GRAY, Harold (cartoonist); Kankakee, Ill., Jan. 20, 1894.
- GRAYSON, Kathryn (Zelma Hedrick) (actress); Winston-Salem, N. C.
- GRECO, José (dancer); Montorio nei Frentani, It., Dec. 23, 1918.
- GREEN, Paul (dramatist); Lillington, N. C., Mar. 17, 1894.
- GREENBERG, Hank (baseball executive); New York City, Jan. 1, 1911.
- GREENE, Graham (novelist); Berkhamstead, Eng., Oct. 2, 1904.
- GRIMM, Charley (baseball manager); St. Louis, Mo., Aug. 28, 1898.
- GRISWOLD, A. Whitney (educator); Morris-town, N. J., Oct. 27, 1906.
- GROFÉ, Ferde (composer); New York City, Mar. 27, 1892.
- GROMYKO, Andrei A. (Soviet statesman); Starye Gromyki, Rus., July 5, 1909.
- GRONCHI, Giovanni (Pres., It.); Pontedera, It., Sept. 10, 1887.
- GROPIUS, Walter (architect); Berlin, Ger., May 18, 1883.
- GROSZ, George (painter); Berlin, Ger., July 26, 1893.
- GROVE, Lefty (Robert M.) (baseball player); Lonaconing, Md., Mar. 6, 1900.
- GRUENTHER, Gen. Alfred M. (Pres., Reo Cross); Platte Center, Nebr., Mar. 3, 1899.
- GUEST, Edgar (poet); Birmingham, Eng., Aug. 20, 1881.
- GUINNESS, Alec (actor); Marylebone, London, Eng., Apr. 2, 1914.
- GUNTHER, John (journalist & author); Chicago, Ill., Aug. 30, 1901.
- GUSTAVUS VI (King, Sweden); Stockholm, Swed., Nov. 11, 1882.
- GWENN, Edmund (actor); London, Eng., Sept. 26, 1877.
- HACKETT, Francis (critic & novelist); Kilkeny, Ire., Jan. 21, 1883.

- HAGEN, Uta** (actress); Gottingen, Ger., June 12, 1919.
- HAGEN, Walter** (golfer); Rochester, N. Y., Dec. 21, 1892.
- HAGERTY, James C.** (Pres. Press Secy., U. S.); Plattsburg, N. Y., May 9, 1909.
- HAILE SELASSIE I** (Emperor, Ethiopia); Ethiopia, July 17, 1891.
- HALAS, George** (football coach); Chicago, Ill., Feb. 2, 1895.
- HAMMARSKJÖLD, Dag** (Sec. Gen., U. N.); Jönköping, Swed., July 29, 1905.
- HAMMERSTEIN, Oscar, II** (librettist); New York City, July 12, 1895.
- HAMMETT, Dashiell** (novelist); St. Marys Co., Md., May 27, 1894.
- HAND, Learned** (U. S. jurist); Albany, N. Y., Jan. 27, 1872.
- HANDY, William C.** (blues composer); Florence, Ala., Nov. 16, 1873.
- HANSON, Howard** (composer); Wahoo, Nebr., Oct. 28, 1896.
- HARDWICKE, Sir Cedric** (actor); Lye, Eng., Feb. 19, 1893.
- HARRIDGE, Will** (baseball executive); Chicago, Ill., Oct. 16, 1886.
- HARRIMAN, W. Averell** (Governor, New York); Nov. 15, 1891.
- HARRIS, Bucky** (Stanley R.) (baseball manager); Port Jervis, N. Y., Nov. 3, 1896.
- HARRIS, Jed** (stage producer); Vienna, Aus., Feb. 25, 1900.
- HARRIS, Julie** (actress); Grosse Pointe Park, Mich., Dec. 2, 1925.
- HARRIS, Phil** (band leader); Linton, Ind., June 24, 1906.
- HARRIS, Roy** (composer); Lincoln Co., Okla., Feb. 12, 1898.
- HARRISON, Rex** (actor); Huyton, Eng., Mar. 5, 1908.
- HARSHMAN, Jack** (baseball player); San Diego, Calif., July 12, 1927.
- HART, Moss** (dramatist); New York City, Oct. 24, 1904.
- HATLO, Jimmy** (cartoonist); Providence, R. I., Sept. 1, 1898.
- HAVOC, June** (June Hovick) (actress); Seattle, Wash.
- HAWKINS, Jack** (actor); London, Eng., Sept. 14.
- HAYES, Alfred** (novelist); London, 1911.
- HAYES, Helen** (Helen Hayes Brown) (actress); Washington, D. C., Oct. 10, 1900.
- HAYES, Roland** (tenor); Curryville, Ga., June 3, 1887.
- HAYMES, Dick** (singer); Argentina.
- HAYWARD, Leland** (theatrical producer); Nebraska City, Nebr., Sept. 13, 1902.
- HAYWARD, Susan** (Edythe Marrener) (actress); Brooklyn, N. Y., June 30, 1919.
- HAYWORTH, Rita** (Margarita Cansino) (actress); New York City, Oct. 17, 1918.
- HEALD, Henry T.** (educator); Lincoln, Nebr., Nov. 8, 1904.
- HEARST, David W.** (publisher); New York City, Dec. 2, 1915.
- HEARST, John Randolph** (publisher); New York City, Sept. 26, 1909.
- HEARST, Randolph A.** (publisher); New York City, Dec. 2, 1915.
- HEARST, William Randolph, Jr.** (publisher); New York City, Jan. 27, 1908.
- HEATTER, Gabriel** (radio commentator); New York City, 1890.
- HECHT, Ben** (novelist & dramatist); New York City, Feb. 28, 1894.
- HEFLIN, Van** (actor); Walters, Okla., Dec. 13, 1910.
- HEIFETZ, Jascha** (violinist); Vilna, Rus., Feb. 2, 1901.
- HELLMAN, Lillian** (dramatist); New Orleans, La., June 20, 1905.
- HEMINGWAY, Ernest** (novelist); Oak Park, Ill., July 21, 1898.
- HENDERSON, Skitch** (pianist); Birmingham, Eng., Jan. 27, 1918.
- HENIE, Sonja** (skater); Oslo, Nor., Apr. 8, 1913.
- HENREID, Paul** (actor); Trieste, Jan. 10, 1908.
- HEPBURN, Audrey** (actress); Brussels, Belg., May 4, 1929.
- HEPBURN, Katharine** (actress); Hartford, Conn., 1909.
- HERBLOCK** (Herbert L. Block) (cartoonist); Chicago, Ill., Oct. 13, 1909.
- HERMAN, Woody** (band leader); Milwaukee, Wis., May 16, 1913.
- HERSEY, John R.** (novelist); Tientsin, China, June 17, 1914.
- HERSHEY, Lewis B.** (U. S. major general); Steuben Co., Ind., Sept. 12, 1893.
- HESS, Dame Myra** (pianist); London, Eng., Feb. 25, 1890.
- HESTON, Charlton** (actor); Evanston, Ill., Oct. 4, 1924.
- HILDEGARDE, (Hildegard Loretta Sell)** (entertainer); Adell, Wis., Feb. 1, 1906.
- HILLER, Wendy** (actress); Bramhall, Eng., Aug. 15, 1912.
- HILLIARD, Harriet** (Peggy Lou Snyder) (actress & singer); Des Moines, Iowa.
- HINDEMITH, Paul** (composer); Hanau, Ger., Nov. 16, 1895.
- HIROHITO** (Emperor, Japan); Japan, Apr. 29, 1901.
- HIRSCH, Max** (horse trainer); Fredericksburg, Tex., July 12, 1880.
- HITCHCOCK, Alfred J.** (movie director); England, Aug. 13, 1899.
- HO CHI MINH** (Vietnam statesman); Annam, Indo-China, c. 1891.
- HOBBY, Oveta Culp** (former Secy. of Welfare, U. S.); Killeen, Tex., Jan. 19, 1905.
- HOBSON, Laura Z.** (Laura K. Zametkin) (novelist); New York City.
- HOBSON, Valerie** (actress); Larne, N. Ire., 1918.
- HODGES, Gil** (Gilbert) (baseball player); Princeton, Ind., Apr. 4, 1924.
- HOGAN, Ben** (golfer); Dublin, Tex., Aug. 13, 1912.
- HOLDEN, William** (William Franklin Beedle, Jr.) (actor); O'Fallon, Ill., Apr. 17, 1918.
- HOLLIDAY, Judy** (actress); New York City, June 21, 1923.
- HOLM, Celeste** (actress & singer); New York City, Apr. 29, 1919.
- HOMOLKA, Oscar** (actor); Vienna, Aus., 1901.
- HOOK, Sidney** (philosopher); New York City; Dec. 20, 1902.
- HOOVER, Herbert C.** (U. S. statesman); West Branch, Iowa, Aug. 10, 1874.
- HOOVER, J. Edgar** (FBI Director, U. S.); Washington, D. C., Jan. 1, 1895.

- HÖPE**, Bob (comedian); London, Eng., May 29, 1903.
- HOPKINS**, Miriam (actress); Bainbridge, Ga., Oct. 18, 1902.
- HOPPE**, Willie (billiards player); Cornwall, N. Y., Oct. 11, 1887.
- HOPPER**, Hedda (columnist); Hollidaysburg, Pa., June 2, 1890.
- HORNE**, Lena (singer) Brooklyn, New York, 1918.
- HORNSBY**, Rogers (baseball manager); Winters, Tex., Apr. 27, 1896.
- HOROWITZ**, Vladimir (pianist); Kiev, Rus., Oct. 1, 1904.
- HORTON**, Edward Everett (actor); Brooklyn, N. Y., Mar. 18, 1886.
- HOUSMAN**, Laurence (dramatist & novelist); Bromsgrove, Eng., July 18, 1865.
- HOWARD**, Roy W. (publisher); Gano, Ohio, Jan. 1, 1883.
- HOWELL**, Jim Lee (football coach); Lonokey, Ark., Sept. 27, 1914.
- HUBBELL**, Carl (baseball executive); Carthage, Mo., June 22, 1903.
- HUDSON**, Rock (actor); Winnetka, Ill., Nov. 17, 1925.
- HUGHES**, Langston (poet); Joplin, Mo., Feb. 1, 1902.
- HULL**, Henry (actor); Louisville, Ky., Oct. 3, 1890.
- HUMPHREY**, George M. (former Secy. of Treasury, U. S.); Cheboygan, Mich., Mar. 8, 1890.
- HUNTER**, Kim (Janet Cole) (actress); Detroit, Mich., Nov. 12, 1922.
- HUNTER**, Tab (actor); New York City, July 11, 1931.
- HUROK**, Sol (impresario); Pögar, Rus., Apr. 9, 1888.
- HUSSEY**, Ruth (actress); Providence, Rhode Island.
- HUSTON**, John (movie director); Nevada, Mo., Aug. 5, 1906.
- HUTCHINS**, Robert M. (educator); Brooklyn, N. Y., Jan. 17, 1899.
- HUTTON**, Barbara (heiress); New York City, Nov. 14, 1912.
- HUTTON**, Betty (Betty Thornberg) (singer); Battle Creek, Mich., Feb. 26, 1921.
- HUXLEY**, Aldous (novelist); Godalming, Eng., July 26, 1894.
- HUXLEY**, Julian S. (biologist); England, June 22, 1887.
- IBERT**, Jacques (composer); Paris, Fr., Aug. 15, 1890.
- INGE**, William (dramatist); Independence, Kans., May 3, 1913.
- IRELAND**, John (actor); Vancouver, B. C., Can., Jan. 30, 1915.
- ISHERWOOD**, Christopher (novelist); Disley, Cheshire, Eng., Aug. 26, 1904.
- ITURBI**, José (pianist); Valencia, Sp., Nov. 28, 1895.
- IVES**, Burl (folksinger & actor); Hunt, Ill., June 14, 1909.
- JACOBS**, Hirsch (horse trainer); New York City, Apr. 8, 1904.
- JAFFE**, Sam (actor); New York City, Mar. 8, 1898.
- JAGGER**, Dean (actor); Lima, Ohio, Nov. 7, 1903.
- JAMES**, Harry (trumpeter); Albany, Ga., Mar. 15, 1916.
- JAMESON**, Margaret Storm (novelist); Whitby, Eng., 1897.
- JEANMAIRE**, Renée (dancer & actress); Paris, Fr., Apr. 29, 1924.
- JEBB**, Sir Gladwyn (British statesman); England, Apr. 25, 1900.
- JEFFERS**, Robinson (poet); Pittsburgh, Pa., Jan. 10, 1887.
- JESSEL**, George (comedian); New York City, Apr. 3, 1898.
- JESSUP**, Philip C. (U. S. statesman); New York City, Jan. 5, 1897.
- JOHN**, Augustus (painter); Tenby, Wales, Jan. 4, 1879.
- JOHNS**, Glynis (actress); Durban, So. Af., Oct. 5, 1923.
- JOHNSON**, Celia (actress); Richmond, Eng., Dec. 18, 1908.
- JOHNSON**, Chick (Harold) (comedian); Chicago, Ill., Mar. 5, 1895.
- JOHNSON**, Van (actor); Newport, R. I., Aug. 20, 1916.
- JOHNSTON**, Eric A. (movie executive); Washington, D. C., Dec. 21, 1896.
- JOLIOT-CURIE**, Frédéric. (physicist); Paris, Fr., Mar. 19, 1900.
- JONES**, Bobby (golfer); Atlanta, Ga., Mar. 17, 1902.
- JONES**, James (novelist); Robinson, Ill., Nov. 6, 1921.
- JONES**, Jennifer (Phyllis Isley) (actress); Tulsa, Okla., Mar. 2, 1910.
- JONES**, Sam (baseball player); Stewartsville, Ohio, Dec. 14, 1925.
- JORDAN**, James. See McGee.
- JORDAN**, Marian. See McGee.
- JORY**, Victor (actor); Dawson, Can., Nov. 23, 1902.
- JOSEPHSON**, Matthew (critic & biographer); Brooklyn, N. Y., Feb. 15, 1899.
- JOURDAN**, Louis (actor); Marseilles, Fr., June 18, 1921.
- JULIANA** (Queen, Netherlands); The Hague, Neth., Apr. 30, 1909.
- JUNG**, Carl G. (psychiatrist); Basel, Switz., July 26, 1875.
- KADAR**, János (Premier of Hungary); Hungary, 1912.
- KAISER**, Henry J. (industrialist); Sprout Brook, N. Y., May 9, 1882.
- KALINE**, Al (Albert) (baseball player); Baltimore, Md., Dec. 19, 1934.
- KALTENBORN**, Hans V. (radio commentator); Milwaukee, Wis., July 9, 1878.
- KANIN**, Garson (dramatist & director); Rochester, N. Y., Nov. 24, 1912.
- KANTOR**, MacKinlay (novelist); Webster City, Iowa, Feb. 4, 1904.
- KARLOFF**, Boris (William Henry Pratt) (actor); Dulwich, Eng., Nov. 23, 1887.
- KAUFFMANN**, Samuel H. (publisher); Washington, D. C., Feb. 24, 1898.
- KAUFMAN**, George S. (dramatist); Pittsburgh, Pa., Nov. 16, 1889.
- KAYE**, Danny (David Daniel Kominski) (comedian); Brooklyn, New York, Jan. 18, 1913.
- KAYE**, Nora (Nora Koreff) (ballerina); New York City, 1920.

- KAYE, Sammy (band leader); Cleveland, Ohio, Mar. 13, 1910.
- KAZAN, Ella (movie & stage director); Constantinople, Turk., Sept. 7, 1909.
- KEATON, Buster (comedian); Piqua, Kans., Oct. 4, 1896.
- KEEL, Howard (singer & actor); Gillespie, Ill.
- KEFAUVER, Estes (U. S. legislator); Madisonville, Tenn., July 26, 1903.
- KELLAND, Clarence Budington (novelist); Portland, Mich., July 11, 1881.
- KELLER, Helen (author & social worker); Tusculumbia, Ala., June 27, 1880.
- KELLY, Emmett (circus clown); Sedan, Kans., 1898.
- KELLY, Gene (actor); Pittsburgh, Pa., Aug. 23, 1912.
- KELLY, Grace (actress); Philadelphia, Pa., Nov. 12, 1929.
- KELLY, Walt (cartoonist); Philadelphia, Pa., Aug. 25, 1913.
- KENNAN, George F. (writer & ex Amb. to USSR); Milwaukee, Wis., Feb. 16, 1904.
- KENNEDY, Arthur (actor); Worcester, Mass., Feb. 17, 1914.
- KENNEDY, Margaret (novelist); London, Eng., 1896.
- KENT, Rockwell (painter); Tarrytown Heights, N. Y., June 21, 1882.
- KERENSKY, Alexander (former Russian Premier); Simbirsk, Rus., 1881.
- KERR, Deborah (actress); Helensburgh, Scot., Sept. 30, 1921.
- KETTERING, Charles F. (engineer); nr. Loudonville, Ohio, Aug. 29, 1876.
- KEYES, Frances Parkinson (novelist); Univ. of Va., July 21, 1885.
- KHACHATURIAN, Aram (composer); Tiflis, Rus., June 6, 1903.
- KHRUSHCHEV, Nikita S. (Soviet statesman); Kalinovka, Rus., Apr. 17, 1894.
- KIEPURA, Jan (tenor); Sosnowiec, Pol., May 16, 1902.
- KIERAN, John (author); New York City, Aug. 2, 1892.
- KILGALLAN, Dorothy (columnist); Chicago, Ill., July 3, 1913.
- KILPATRICK, John Reed (sports executive); New York City, June 15, 1889.
- KINER, Ralph (baseball player); Santa Rita, N. Mex., Oct. 27, 1922.
- KING, Dennis (actor); Coventry, Eng., Nov. 2, 1897.
- KING, Henry (movie director); Christianburg, Va., Jan. 24, 1896.
- KINGSLEY, Sidney (Sidney Kirschner) (dramatist); New York City, Oct. 18, 1906.
- KIPNIS, Alexander (basso); Ukraine, Feb. 1, 1896.
- KIRK, Grayson (educator); Jeffersonville, Ohio, Oct. 12, 1903.
- KIRK, Lisa (singer); Charleroi, Pa.
- KIRKPATRICK, Ralph (harpsichordist); Leominster, Mass., June 10, 1911.
- KIRSTEN, Dorothy (soprano); Montclair, N. J., July 6, 1919.
- KITT, Eartha (singer & actress); North, S. C., Jan. 26, 1928.
- KLEMPERER, Otto (orchestra conductor); Breslau, Ger., 1835.
- KLUSZEWSKI, Ted (Theodore) (baseball player); Argo, Ill., Sept. 10, 1924.
- KNIGHT, John S. (publisher); Bluefield, W. Va., Oct. 26, 1894.
- KODÁLY, Zoltán (composer); Kecskemét, Hung., Dec. 16, 1882.
- KOESTLER, Arthur (novelist); Budapest, Hung., Sept. 5, 1905.
- KOKOSCHKA, Oskar (painter); Pöchlarn, Aus., Mar. 1, 1886.
- KOSTELANETZ, Andre (orchestra conductor); Petrograd, Rus., Dec. 22, 1901.
- KOVACS, Ernle (comedian); Trenton, N. J., Jan. 23, 1919.
- KRAMER, John A. (tennis player); Las Vegas, Nev., Aug. 1, 1921.
- KRAMER, Stanley E. (movie producer); New York City, Sept. 29, 1913.
- KREISLER, Fritz (violinist); Vienna, Aus., Feb. 2, 1875.
- KROCK, Arthur (journalist); Nov. 16, 1886.
- KRUGER, Otto (actor); Toledo, Ohio, Sept. 6, 1885.
- KRUPA, Gene (drummer & band leader); Chicago, Ill., Jan. 15, 1909.
- KUBELIK, Rafael (orchestra conductor); Bychory, Bohemia, June 29, 1914.
- KUCKS, John (baseball player); Hoboken, N. J., Jan. 27, 1933.
- KUENN, Harvey (baseball player); Milwaukee, Wis., Dec. 4, 1930.
- KULLMAN, Charles (tenor); New Haven, Conn., Jan. 13, 1903.
- KURTZ, Efrem (orchestra conductor); St. Petersburg, Rus., Nov. 7, 1900.
- LABINE, Clem (Clement) (baseball player); Lincoln, R. I., Aug. 6, 1926.
- LADD, Alan (actor); Hot Springs, Ark., Sept. 3, 1913.
- LA FARGE, Oliver (author & anthropologist); New York City, Dec. 19, 1901.
- LAHR, Bert (Irving Lahrheim) (comedian); New York City, Aug. 13, 1895.
- LAINE, Frankie (singer); Chicago, Ill., Mar. 30, 1913.
- LAMARR, Hedy (actress); Vienna, Aus.
- LAMAS, Fernando (actor); Buenos Aires, Arg., Jan. 9.
- LAMOUR, Dorothy (actress); New Orleans, La., Dec. 10, 1914.
- LANCASTER, Burt (actor); New York City, Nov. 2, 1913.
- LANCHESTER, Elsa (Elsa Sullivan) (actress); London, Eng., Oct. 28, 1902.
- LANDOWSKA, Wanda (harpsichordist); Warsaw, Pol., July 5, 1877.
- LANDY, John (mile runner); Australia, Apr. 4, 1930.
- LANG, Fritz (movie director); Vienna, Aus., Dec. 5, 1890.
- LANG, Harold (dancer & actor); San Francisco, Calif.
- LANZA, Mario (Alfredo Arnold Cocozza) (tenor); So. Philadelphia, Pa., Jan. 31, 1921.
- LA ROSA, Julius (singer); Brooklyn, N. Y., Jan. 2, 1930.
- LAUGHTON, Charles (actor); Scarborough, Eng., July 1, 1899.
- LAWFORD, Peter (actor); London, Eng., Sept. 7, 1923.
- LAWRENCE, Brooks (baseball player); Springfield, Ohio, Jan. 30, 1925.

- LAWRENCE**, David (journalist); Philadelphia, Pa., Dec. 25, 1888.
- LAWRENCE**, Marjorie (soprano); Deans Marsh, Austr., Feb. 17, 1909.
- LEAF**, Munro (children's writer); Hamilton, Md., Dec. 4, 1905.
- LEAHY**, Frank (football coach); O'Neill, Nebr., Aug. 21, 1908.
- LE CORBUSIER** (Charles-Édouard Jeanneret) (architect); La Chaux De Fonds, Switz., Oct. 6, 1887.
- LEE**, Gypsy Rose (Rose Hovik) (entertainer); Seattle, Wash., Feb. 9, 1914.
- LEE**, Peggy (singer); Jamestown, N. Dak., 1921.
- LE GALLIENNE**, Eva (actress & director); London, Eng., Jan. 11, 1899.
- LEHMANN**, Lotte (soprano); Perleberg, Ger., July 2, 1885.
- LEIGH**, Janet (Jeanette Morrison) (actress); Merced, Calif., July 6, 1927.
- LEIGH**, Vivien (Vivian Hartley) (actress); Darjeeling, India, Nov. 5, 1913.
- LEIGHTON**, Margaret (actress); Birmingham, Eng., Feb. 26, 1922.
- LEINSDORF**, Erich (orchestra conductor); Vienna, Aus., Feb. 4, 1912.
- LEMON**, Bob (baseball player); San Bernardino, Calif., Sept. 22, 1920.
- LEMON**, Jim (baseball player); Covington, Va., Mar. 23, 1928.
- LENER**, Alan Jay (librettist); New York City, Aug. 31, 1918.
- LENER**, Max (social writer); Minsk, Rus., Dec. 20, 1902.
- LE ROY**, Mervyn (movie producer & director); San Francisco, Calif., Oct. 15, 1900.
- LEVANT**, Oscar (pianist); Pittsburgh, Pa., Dec. 27, 1906.
- LEVENE**, Sam (actor); New York City, 1907.
- LEVI**, Carlo (novelist); Turin, It., Nov. 29, 1902.
- LEVIN**, Herman (theatrical producer); Philadelphia, Pa., Mar. 1, 1908.
- LEWIS**, Fulton, Jr. (columnist); Washington, D. C., Apr. 30, 1903.
- LEWIS**, Jerry (comedian); Newark, N. J., Mar. 16, 1926.
- LEWIS**, Joe E. (comedian); New York City.
- LEWIS**, John L. (labor leader); Lucas, Iowa, Feb. 12, 1880.
- LEWIS**, Ted (band leader); Circleville, Ohio.
- LIBERACE** (Wladziu Liberace) (pianist); West Allis, Wis., May 16, 1919.
- LIE**, Trygve (former U. N. Secretary General); Oslo, Nor., July 16, 1896.
- LILIENTHAL**, David E. (U. S. statesman); Morton, Ill., July 8, 1899.
- LILLIE**, Beatrice (actress); Toronto, Can., May 29, 1898.
- LIN** Yutang (philosopher); Changchow, China, Oct. 10, 1895.
- LINDBERGH**, Anne Morrow (writer); Englewood, N. J., 1907.
- LINDBERGH**, Charles A. (aviator); Detroit, Mich., Feb. 4, 1902.
- LINDSAY**, Howard (dramatist); Waterford, N. Y., Mar. 29, 1889.
- LINKLETTER**, Art (actor); Moose Jaw, Sask., Can., July 17, 1912.
- LIPCHITZ**, Jacques (sculptor); Druskieniki, Lith., Aug. 22, 1891.
- LIPPMANN**, Walter (author & journalist); New York City, Sept. 23, 1889.
- LITTLE**, Lou (football coach); Leominster, Mass., Dec. 6, 1893.
- LIVESY**, Roger (actor); Barry, Wales, June 25, 1906.
- LLEWELLYN**, Richard (novelist); St. David's, Wales.
- LLOYD**, Harold (comedian); Burchard, Nebr., Apr. 20, 1894.
- LLOYD**, Selwyn (British diplomat); West Kirby, Eng., July 28, 1904.
- LOCKWOOD**, Margaret (actress); Karachi, India, 1916.
- LODGE**, Henry Cabot, Jr. (U. N. Delegate, U. S.); Nahant, Mass., July 5, 1902.
- LOESSER**, Frank (song writer); New York City, June 29, 1910.
- LOEWE**, Frederick (song writer); Vienna, Aus., June 10, 1904.
- LOGAN**, Joshua (director & dramatist); Texarkana, Tex., Oct. 5, 1908.
- LOLOBRIGIDA**, Gina (actress); Subiaco, It., 1928.
- LOMBARDO**, Guy (band leader); London, Can., June 19, 1902.
- LOOS**, Anita (novelist); Sisson, Calif., Apr. 26, 1893.
- LOPEZ**, Al (baseball manager); Tampa, Fla., Aug. 20, 1908.
- LOPEZ**, Hector (baseball player); Colón, Panamá, July 8, 1932.
- LOPEZ**, Vincent (band leader); Brooklyn, N. Y., Dec. 10, 1898.
- LOREN**, Sophia (Sofia Scicolone) (actress); Naples, It., Sept. 30, 1934.
- LORRE**, Peter (actor); Rosenberg, Hung., June 26, 1904.
- LOUIS**, Joe (Joe Louis Barrow) (boxer); Lexington, Ala., May 13, 1914.
- LOVEJOY**, Frank (actor); New York City, Mar. 28.
- LOW**, David (cartoonist); Dunedin, N. Z., Apr. 7, 1891.
- LOWELL**, Robert (poet); Boston, Mass., Mar. 1, 1917.
- LOY**, Myrna (Myrna Williams) (actress); near Helena, Mont., Aug. 2, 1905.
- LUCE**, Clare Boothe (playwright, ex-ambassador to Italy); New York City, Apr. 10, 1903.
- LUCE**, Henry R. (publisher); Shantung, China, Apr. 3, 1898.
- LUKAS**, Paul (actor); Budapest, Hung., May 26, 1895.
- LUNT**, Alfred (actor); Milwaukee, Wis., Aug. 19, 1893.
- LUPINO**, Ida (actress); London, Eng., Feb. 4, 1918.
- LYNN**, Diana (Dolly Loehr) (actress); Los Angeles, Calif., Oct. 7, 1926.
- MacARTHUR**, Douglas (U. S. general); Little Rock Barracks, Ark., Jan. 26, 1880.
- MacDONALD**, Jeanette (soprano); Philadelphia, Pa., June 18, 1907.
- MacGRATH**, Leueen (actress & dramatist); London, Eng., July 3, 1914.
- MacLEISH**, Archibald (poet); Glencoe, Ill., May 7, 1892.
- MACMILLAN**, Harold (British Prime Minister); London, Eng., Feb. 10, 1894.

- MacRAE**, Gordon (singer); East Orange, N. J., Mar. 12, 1921.
- MADISON**, Guy (Robert Moseley) (actor); Bakersfield, Calif., Jan. 19, 1922.
- MAGLIE**, Sal (Salvatore) (baseball player); Niagara Falls, N. Y., Apr. 26, 1917.
- MAGNANI**, Anna (actress); Rome, It., Mar. 7, 1908.
- MAILER**, Norman (novelist); Long Branch, N. J., Jan. 31, 1923.
- MAIN**, Marjorie (actress); Acton, Ind., Feb. 24, 1890.
- MALAN**, Daniel F. (So. African statesman); Riebeeck West. So. Af., May 22, 1874.
- MALENKOV**, Georgi M. (Soviet statesman); Orenburg, Rus., Jan. 8, 1902.
- MALIK**, Yakov (Soviet diplomat); Kharkov, Ukr., 1906.
- MALONE**, Dorothy (actress) Chicago, Ill., Jan. 30, 1925.
- MALRAUX**, André (novelist); Paris, Fr., Nov. 3, 1895.
- MANGANO**, Silvana (actress); Rome, It.
- MANGRUM**, Lloyd (golfer); Dallas, Tex., Aug. 1, 1914.
- MANKIEWICZ**, Joseph L. (movie director); Wilkes-Barre, Pa., Feb. 11, 1909.
- MANSFIELD**, Jayne (actress); Bryn Mawr, Pa., Apr. 19, 1933.
- MANTLE**, Mickey (baseball player); Spavinaw, Okla., Oct. 20, 1931.
- MAO** Tse-tung (Chmn. of People's Council, Comm. China); Shao Shan, China, 1893.
- MARBLE**, Alice I. (tennis player); Plumas Co., Calif., Sept. 28, 1913.
- MARCH**, Fredric (Frederick Bickel) (actor); Racine, Wis., Aug. 31, 1897.
- MARCH**, Hal (Harold Mendelson) (actor); San Francisco, Calif., Apr. 22, 1920.
- MARCIANO**, Rocky (Rocco Francis Marchegiano) (boxer); Brockton, Mass., Sept. 1, 1924.
- MARION**, Marty (baseball manager); Richburg, S. C., Dec. 1, 1917.
- MARTAIN**, Jacques (philosopher); Paris, Fr., Nov. 18, 1882.
- MARKOVA**, Alicia (ballerina); London, Eng., Dec. 1, 1910.
- MARQUAND**, John P. (novelist); Wilmington, Del., Nov. 10, 1893.
- MARSHALL**, Catherine (author); Johnson City, Tenn., Sept. 27, 1914.
- MARSHALL**, George C. (U. S. general); Uniontown, Pa., Dec. 31, 1880.
- MARSHALL**, Herbert (actor); London, Eng., May 23, 1890.
- MARSHALL**, Thurgood (lawyer); Baltimore, Md., July 2, 1908.
- MARTIN**, Dean (comedian); Steubenville, Ohio, June 7, 1917.
- MARTIN**, Joseph W., Jr. (U. S. Representative, Mass.); No. Attleboro, Mass., Nov. 3, 1884.
- MARTIN**, Mary (actress); Weatherford, Tex., Dec. 1, 1914.
- MARTIN**, Tony (actor & singer); San Francisco, Calif., Dec. 25, 1914.
- MARTIN**, William McChesney, Jr. (financial executive); St. Louis, Mo., Dec. 17, 1906.
- MARTINELLI**, Giovanni (tenor); Montagnana, It., Oct. 22, 1885.
- MARTINU**, Bohuslav (composer); Policka, Bohemia, Dec. 8, 1890.
- MARX**, Chico (Leonard) (comedian); New York City, Mar. 22, 1891.
- MARX**, Groucho (Julius) (comedian); New York City, Oct. 2, 1895.
- MARX**, Harpo (Arthur) (comedian); New York City, Nov. 23, 1893.
- MASEFIELD**, John (poet); Ledbury, Eng., June 1, 1878.
- MASON**, F. van Wyck (novelist); Boston, Mass., Nov. 11, 1901.
- MASON**, James (actor); Huddersfield, Eng., May 15, 1909.
- MASSEY**, Ilona (Ilona Hajmassy) (actress); Hungary, 1910.
- MASSEY**, Raymond (actor); Toronto, Can., Aug. 30, 1896.
- MASSINE**, Léonide (choreographer); Moscow, Rus., Aug. 9, 1896.
- MATHIAS**, Bob (athlete); Tulare, Calif., Nov. 17, 1930.
- MATTHEWS**, Ed (Edwin) (baseball player); Texarkana, Tex., Oct. 13, 1931.
- MATURE**, Victor (actor); Louisville, Ky., Jan. 19, 1916.
- MAUGHAM**, William Somerset (novelist); Paris, Fr., Jan. 25, 1874.
- MAULDIN**, William H. (cartoonist); Mountaint Park, N. Mex., Oct. 29, 1921.
- MAUROIS**, André (Émile Herzog) (novelist); Elbeuf, Fr., July 26, 1885.
- MAXWELL**, Elsa (columnist); Keokuk, Iowa, May 24, 1883.
- MAYER**, Dick (golfer); Stamford, Conn., Aug. 29, 1922.
- MAYER**, Louis B. (movie producer); Minsk, Rus., July 4, 1885.
- MAYNOR**, Dorothy (soprano); Norfolk, Va., Sept. 3, 1910.
- MAYO**, Virginia (Virginia Jones) (actress); St. Louis, Mo., Nov. 30, 1920.
- MAYS**, Wille (baseball player); Fairfield, Ala., May 6, 1931.
- McBRIDE**, Mary Margaret (author); Paris, Mo., Nov. 16, 1899.
- McCAMBRIDGE**, Mercedes (actress); Joliet, Ill., Mar. 17, 1918.
- McCAREY**, Leo (movie director); Los Angeles, Calif., Oct. 3, 1898.
- McCARTHY**, Joe (baseball manager); Philadelphia, Pa., Apr. 21, 1887.
- McCLOY**, John J. (lawyer); Philadelphia, Pa., Mar. 31, 1895.
- McCREA**, Joel (actor); Los Angeles, Calif., Nov. 5, 1906.
- McCULLERS**, Carson (author); Columbus, Ga., Feb. 19, 1917.
- McDONALD**, David J. (labor leader); Pittsburgh, Pa., Nov. 22, 1902.
- McGEE**, Fibber (James Jordan) (actor); Peoria, Ill., Nov. 16, 1896.
- McGEE**, Molly (Marian Jordan) (actress); Peoria, Ill., Apr. 15, 1898.
- McGUIRE**, Dorothy (actress); Omaha, Nebr., June 14, 1919.
- McLAGLEN**, Victor (actor); Tunbridge Wells, Eng., Dec. 11, 1886.
- MEAD**, Margaret (anthropologist); Philadelphia, Pa., Dec. 16, 1901.
- MEANY**, George (labor leader); New York City, Aug. 16, 1894.
- MEDINA**, Harold R. (U. S. jurist); Brooklyn, N. Y., Feb. 16, 1888.

- MEEKER** Ralph (Ralph Rathgeber) (actor); Minneapolis, Minn., Nov. 21, 1920.
- MEIER**, Goida (Goida Myerson) (Israeli statesman); Kiev, Rus.
- MEITNER**, Lise (physicist); Vienna, Aus., Nov. 7, 1878.
- MELCHIOR**, Lauritz (tenor); Copenhagen, Den., Mar. 20, 1890.
- MELTON**, James (tenor); Moultrie, Ga., Jan. 2, 1904.
- MENDÈS-FRANCE**, Pierre (French statesman); Paris, Fr., Jan. 11, 1905.
- MENJOU**, Adolphe (actor); Pittsburgh, Pa., Feb. 18, 1890.
- MENOTTI**, Gian-Carlo (composer); Cadegliano, It., July 7, 1911.
- MENUHIN**, Yehudi (violinist); New York City, Apr. 22, 1916.
- MENZIES**, Robert Gordon (Prime Minister, Australia); Jeparit, Australia, Dec. 20, 1894.
- MERCER**, Johnny (singer & song writer); Savannah, Ga., Nov. 18, 1909.
- MEREDITH**, Burgess (actor); Cleveland, Ohio, Nov. 16, 1908.
- MERMAN**, Ethel (Ethel Zimmerman) (actress & singer); Astoria, New York, Jan. 16, 1909.
- MERRILL**, Robert (baritone); Brooklyn, N. Y., June 4, 1919.
- MERTON**, Thomas (poet & religious writer); Prades, Fr., Jan. 31, 1915.
- MESTA**, Perle (hostess); Sturgis, Mich., 1891.
- MESTROVIĆ**, Ivan (sculptor); Vrpolje, Yugos., Aug. 15, 1883.
- METALIOUS**, Grace (author); Manchester, N. H., Sept. 8, 1924.
- MEYER**, Eugene (publisher); Los Angeles, Calif., Oct. 31, 1875.
- MICHENER**, James A. (novelist); New York City, Feb. 3, 1907.
- MIDDLECOFF**, Cary (golfer); Halls, Tenn., Jan. 6, 1921.
- MIELZINER**, Jo (stage designer); Paris, Fr., Mar. 19, 1901.
- MILANOV**, Zinka (soprano); Zagreb, Yugos., May 17, 1908.
- MILHAUD**, Darius (composer); Aix-en-Provence, Fr., Sept. 4, 1892.
- MILLAND**, Ray (Jack Millane) (actor); Neath, Wales, Jan. 3, 1907.
- MILLER**, Arthur (dramatist); New York City, 1915.
- MILLER**, Gilbert (theatrical producer); New York City, July 3, 1884.
- MILSTEIN**, Nathan (violinist); Odessa, Russ., Dec. 31, 1904.
- MINTON**, Sherman (former U. S. jurist); Georgetown, Ind., Oct. 20, 1890.
- MIRÓ**, Joan (painter); Barcelona, Sp., Apr. 21, 1893.
- MITCHELL**, James P. (Secy. of Labor, U. S.); Elizabeth, N. J., Nov. 12, 1902.
- MITCHELL**, Millard (actor); Havana, Cuba, 1903.
- MITCHELL**, Thomas (actor); Elizabeth, N. J., July 11, 1895.
- MITCHUM**, Robert (actor); Rising Sun, Del.
- MITROPOULOS**, Dimitri (orchestra conductor); Athens, Gr., Feb. 18, 1896.
- MOISEWITSCH**, Benno (pianist); Odessa, Rus., Feb. 22, 1890.
- MOLLET**, Guy (French statesman); Flers, Orne, Fr., Dec. 31, 1905.
- MOLOTOV**, Vyacheslav M. (V. M. Skryabin) (Soviet statesman); Kukarka, Rus., Mar. 9, 1890.
- MONROE**, Marilyn (Norma Daugherty) (actress); Los Angeles, June 1, 1928.
- MONROE**, Vaughn (band leader); Akron, Ohio, Oct. 7, 1912.
- MONSARRAT**, Nicholas (novelist); Liverpool, Eng., Mar. 22, 1910.
- MONTEUX**, Pierre (orchestra conductor); Paris, Fr., Apr. 4, 1875.
- MONTGOMERY**, Robert (Henry, Jr.) (actor); Beacon, N. Y., May 21, 1904.
- MOORE**, Archie (boxer); Collinsville, Ill., Dec. 13, 1916.
- MOORE**, Garry (Thomas Garrison Morfit) (comedian); Baltimore, Md., Jan. 31, 1915.
- MOORE**, Henry (sculptor); Castleford, Eng., July 30, 1898.
- MOORE**, Marianne (poet); Kirkwood, Mo., Nov. 15, 1887.
- MOORE**, Terry (Helen Koford) (actress); Los Angeles, Calif., Jan. 7, 1929.
- MOORE**, Victor (actor); Hammonton, N. J., Feb. 24, 1876.
- MOOREHEAD**, Agnes (actress); Clinton, Mass., Dec. 6, 1906.
- MORGAN**, Michele (Simone Roussel) (actress); Paris, Fr., Feb. 29, 1920.
- MORINI**, Erica (violinist); Vienna, Aus., Jan. 5, 1910.
- MORLEY**, Robert (actor); Wiltshire, Eng., May 26, 1908.
- MOSES**, Grandma (Anna Mary Robertson) (painter); Greenwich, N. Y., Sept. 7, 1860.
- MOSES**, Robert (NYC public official); New Haven, Conn., Dec. 18, 1888.
- MULLOY**, Gardnar (tennis player); Miami, Fla., Nov. 22, 1914.
- MUMFORD**, Lewis (author); Flushing, N. Y., Oct. 19, 1895.
- MUNCH**, Charles (orchestra conductor); Strasbourg, Ger., Sept. 1891.
- MUNI**, Paul (Muni Weisenfreund) (actor); Lemberg, Aus., Sept. 22, 1895.
- MUNSEL**, Patrice (soprano); Spokane, Wash., May 14, 1925.
- MURPHY**, George (actor); New Haven, Conn., July 4, 1904.
- MURRAY**, Arthur (dancing teacher); New York City, Apr. 4, 1895.
- MURRAY**, Ken (Don Court) (actor); New York City, July 14, 1903.
- MURRAY**, Thomas E. (bus. exec.); Albany, N. Y., June 20, 1891.
- MURROW**, Edward R. (radio commentator); Greensboro, N. C.
- MUSIAL**, Stan (baseball player); Donora, Pa., Nov. 21, 1920.
- NAGURSKI**, Bronko (football player); International Falls, Minn., Nov. 3, 1908.
- NAISH**, J. Carrol (actor); New York City, Jan. 21, 1900.
- NASH**, Ogden (poet); Rye, N. Y., Aug. 19, 1902.
- NASSER**, Gamal Abdel (Premier, Egypt); Egypt, c.1918.
- NATHAN**, George Jean (theater critic); Ft. Wayne, Ind., Feb. 14, 1882.

- NATHAN**, Robert (novelist); New York City, Jan. 2, 1894.
- NATWICK**, Mildred (actress); Baltimore, Md., June 19, 1908.
- NEGRI**, Pola (Appollonia Chalupeć) (actress); Lipno, Pol., 1899.
- NEHRU**, Jawaharlal (Prime Minister, India); Allahabad, India, Nov. 14, 1889.
- NELSON**, Ozzie (Oswald) (band leader); Jersey City, N. J., 1906.
- NENNI**, Pietro (Italian Socialist leader); Faenza, It., Feb. 9, 1891.
- NEVINS**, Allan (historian); Camp Point, Ill., May 20, 1890.
- NEWCOMBE**, Don (baseball player); Madison, N. J., July 14, 1926.
- NEWHOUSE**, Samuel I. (newspaperman); New York City, May 24, 1895.
- NGO DINH DIEM** (Vietnam statesman); Quang Binh, Annam, 1901.
- NIEBUHR**, Reinhold (theologian); Wright City, Mo., June 21, 1892.
- NIVEN**, David (actor); Kirriemuir, Scot., Mar. 1, 1910.
- NIXON**, Richard M. (Vice President, U. S.); Yorba Linda, Calif., Jan. 9, 1913.
- NOGUCHI**, Isamu (sculptor); Los Angeles, Calif., Nov. 7, 1904.
- NOLAN**, Lloyd (actor); San Francisco, Calif., Aug. 11, 1902.
- NORRIS**, Kathleen (novelist); San Francisco, Calif., July 16, 1880.
- NORSTAD**, Gen. Lauris (Supr. Comdr. NATO); Minneapolis, Minn., Mar. 24, 1907.
- NOVAES**, Guiomar (pianist); São João de Boa Vista, Braz., Feb. 28, 1895.
- NOVAK**, Kim (Marilyn Novak) (actress); Chicago, Ill., Feb. 13, 1933.
- NOVOTNA**, Jarmila (soprano); Prague, Bohemia, Sept. 23, 1911.
- NOYES**, Alfred (poet); Wolverhampton, Eng., Sept. 16, 1880.
- NUGENT**, Elliott (author, actor & director); Dover, Ohio, Sept. 20, 1899.
- NUXHALL**, Joe (baseball player); Hamilton, Ohio, July 30, 1928.
- OBERON**, Merle (Merle O'Brien Thompson) (actress); Tasmania, Feb. 19, 1911.
- O'BRIEN**, Edmond (actor); New York City, Sept. 10, 1915.
- O'BRIEN**, Margaret (actress); San Diego, Calif., Jan. 15, 1937.
- O'BRIEN**, Pat (actor); Milwaukee, Wis., Nov. 11, 1899.
- O'CASEY**, Sean (dramatist); Dublin, Ire., 1881.
- O'CONNOR**, Donald (actor); Chicago, Ill., Aug. 28, 1925.
- ODETS**, Clifford (dramatist); Philadelphia, Pa., July 18, 1906.
- O'FAOLAIN**, Seán (story writer); Cork, Ire., Feb. 22, 1900.
- O'FLAHERTY**, Liam (novelist); Aran Is., Ire., 1897.
- O'HARA**, John (novelist); Pottsville, Pa., Jan. 31, 1905.
- O'HARA**, Maureen (Maureen FitzSimons) (actress); Milltown, Ire., Aug. 17, 1921.
- OISTRACH**, David (violinist); Odessa, Russ., 1908.
- O'KEEFFE**, Georgia (painter); Sun Prairie, Wis., Nov. 15, 1887.
- O'KELLY**, Seán T. (President, Ireland); Dublin, Ire., Aug. 25, 1882.
- OLAF V** (King, Norway); Sandringham, Eng., July 2, 1903.
- OLIVIER**, Sir Laurence (actor); Dorking, Eng., May 22, 1907.
- OLSEN**, Ole (John) (comedian); Wabash, Ind., Nov. 6, 1892.
- OPPENHEIMER**, J. Robert (physicist); New York City, Apr. 22, 1904.
- ORMANDY**, Eugene (orchestra conductor); Budapest, Hung., Nov. 18, 1899.
- OTT**, Mel (Melvin T.) (baseball player); Gretna, La., Mar. 2, 1909.
- OWENS**, Jesse (sprinter); Decatur, Ala., Sept. 12, 1913.
- PAGE**, Patti (Clara Ann Fowler) (singer); Claremore, Okla., 1927.
- PALANCE**, Jack (actor); Latimer, Pa., Feb. 18, 1920.
- PALEY**, William S. (broadcasting executive); Chicago, Ill., Sept. 28, 1901.
- PALMER**, Lilli (actress); Posen, Germany, May 27, 1917.
- PARKER**, Dorothy (poet & story writer); West End, N. J., Aug. 22, 1893.
- PARKER**, Eleanor (actress); Cedarville, Ohio, June 26, 1922.
- PARKER**, Fess (actor); Ft. Worth, Tex., Aug. 16, 1927.
- PARSONS**, Louella O. (columnist); Freeport, Ill., Aug. 6, 1893.
- PASTERNAK**, Joseph (movie producer); Simleul-Silvaniei, Rum., Sept. 19, 1901.
- PATON**, Alan (novelist); Pietermaritzburg, So. Af., Jan. 11, 1903.
- PATTERSON**, Floyd (boxer); Waco, N. C., Jan. 4, 1935.
- PAUL I** (King, Greece); Athens, Gr., Dec. 14, 1901.
- PAUL**, Elliot (novelist); Malden, Mass., Feb. 13, 1891.
- PAULING**, Linus Carl (chemist); Portland, Oreg., Feb. 28, 1901.
- PEALE**, Norman Vincent (clergyman & author); Bowersville, Ohio, May 31, 1898.
- PEARSON**, Drew (columnist); Evanston, Ill., Dec. 13, 1897.
- PEARSON**, Hesketh (author); Hawford, Worces., Eng., Feb. 20, 1887.
- PEARSON**, Lester B. (Canadian statesman); Toronto, Ont., Can., Apr. 23, 1897.
- PEATTIE**, Donald Culross (nature writer); Chicago, Ill., June 21, 1898.
- PECK**, Gregory (actor); La Jolla, Calif., Apr. 5, 1916.
- PEERCE**, Jan (Tenor); N. Y. C., 1904.
- PEGLER**, Westbrook (columnist); Minneapolis, Minn., Aug. 2, 1894.
- PERELMAN**, S. J. (Sidney J.); (humorist); Brooklyn, N. Y., Feb. 1, 1904.
- PERÓN**, Juan D. (former President, Argentina); nr. Lobos, Arg., Oct. 8, 1895.
- PETERS**, Roberta (Roberta Peterman) (soprano); New York City, May 4, 1930.
- PETRI**, Egon (pianist); Hanover, Ger., Mar. 23, 1881.
- PETRILLO**, James C. (labor leader); Chicago, Ill., Mar. 16, 1892.

- PHILIP** (Philip Mountbatten) (Duke of Edinburgh); Corfu, June 10, 1921.
- PIATIGORSKY**, Gregor (cellist); Ekaterino-slav, Russ., Apr. 17, 1903.
- PICASSO**, Pablo (painter); Málaga, Sp., Oct. 25, 1881.
- PICCARD**, Auguste (physicist); Basel, Switz., Jan. 28, 1884.
- PICCARD**, Jean Félix (aeronautics engineer); Basel, Switz., Jan. 28, 1884.
- PICKFORD**, Mary (Gladys Mary Smith) (actress); Toronto, Can., Apr. 8, 1893.
- PIDGEON**, Walter (actor); East St. John, Can., Sept. 23, 1898.
- PIERCE**, Bill (baseball player); Detroit, Mich., Apr. 2, 1927.
- PITTS**, Zasu (actress); Parsons, Kans., Jan. 3, 1898.
- PIUS XII** (Eugenio Pacelli) (Pope); Rome, It., Mar. 2, 1876.
- PODRES**, Johnny (baseball player); Witherbee, N. Y., Sept. 30, 1932.
- POHOLSKI**, Tom (baseball player); Detroit, Mich., Aug. 26, 1929.
- PONS**, Lily (soprano); Cannes, Fr., Apr. 13, 1904.
- PONSELLE**, Rosa (soprano); Meriden, Conn., Jan. 22, 1897.
- PORTER**, Cole (song writer); Peru, Ind., June 9, 1893.
- PORTER**, Katherine Anne (story writer); Indian Creek, Tex., May 15, 1894.
- PORTERFIELD**, Bob (baseball player); Newport, Va., Aug. 10, 1924.
- POST**, Emily (author on etiquette); Baltimore, Md., Oct. 3, 1873.
- POULENC**, Francis (composer); Paris, Fr., Jan. 7, 1899.
- POWELL**, Dick (actor); Mt. View, Ark., Nov. 14, 1904.
- POWELL**, Jane (Suzanne Burce) (actress); Portland, Oreg., Apr. 1, ??.
- POWELL**, William (actor); Pittsburgh, Pa., July 29, 1892.
- POWER**, Tyrone (actor); Cincinnati, Ohio, May 5, 1914.
- PREMINGER**, Otto (movie producer & director); Vienna, Aus., Dec. 5, 1906.
- PRESLEY**, Elvis (singer); Tupelo, Miss., Jan. 8, 1935.
- PRICE**, George (cartoonist); Coytesville, N. J., June 9, 1901.
- PRICE**, Vincent (actor); St. Louis, Mo., May 27, 1911.
- PRIESTLEY**, J. B. (John B.) (novelist & dramatist); Bradford, Eng., Sept. 13, 1894.
- PRIMROSE**, William (violinist); Glasgow, Scot., Aug. 23, 1904.
- PRIMUS**, Pearl (dancer); Trinidad, B. W. I., Nov. 29, 1921.
- PUSEY**, Nathan M. (educator); Council Bluffs, Iowa, Apr. 4, 1907.
- QUINN**, Anthony (actor); Chihuahua, Mex., Apr. 21, 1915.
- RABI**, Isidor (physicist); Austria, July 29, 1898.
- RAFT**, George (actor); New York City, Sept. 27, 1922.
- RAINIER III** (Sovereign Prince of Monaco); Monaco, May 31, 1923.
- RAINS**, Claude (actor); London, Eng., Nov. 10, 1889.
- RANK**, J. Arthur (movie producer); Hull, Eng., Dec. 23, 1888.
- RANSOM**, John Crowe (poet); Pulaski, Tenn., Apr. 30, 1888.
- RATHBONE**, Basil (actor); Johannesburg, So. Af., June 13, 1892.
- RATOFF**, Gregory (movie director); St. Petersburg, Russ., Apr. 20, 1897.
- RATTIGAN**, Terence (dramatist); London, Eng., June 10, 1911.
- RATTNER**, Abraham (painter); Poughkeepsie, N. Y., July 8, 1895.
- RAY**, Johnnie (singer); Roseburg, Oreg., Jan. 10, 1927.
- RAYBURN**, Sam (Speaker of House, U. S.); Roane Co., Tenn., Jan. 6, 1882.
- RAYE**, Martha (Margie Yvonne Reed) (actress); Butte, Mont., Aug. 27, 1916.
- REAGAN**, Ronald (actor); Tampico, Ill.
- REDGRAVE**, Michael (actor); Bristol, Eng., Mar. 20, 1908.
- REED**, Donna (actress); Denison, Iowa.
- REED**, Stanley F. (former U. S. jurist); Mason Co., Ky., Dec. 31, 1884.
- REESE**, Pee Wee (Harold) (baseball player); Ekron, Ky., July 23, 1919.
- REID**, Helen Rogers (publisher); Appleton, Wis., Nov. 23, 1882.
- REINER**, Carl (actor); New York City, Mar. 20, 1922.
- REINER**, Fritz (orchestra conductor); Budapest, Hung., Dec. 19, 1888.
- REMARQUE**, Erich Maria (novelist); Osnabrück, Ger., June 22, 1898.
- RENNIE**, Michael (actor); Bradford, Yorks., Eng., Aug. 25, 1909.
- RESTON**, James (journalist); Clydebank, Scot., Nov. 3, 1909.
- REUTHER**, Walter P. (labor leader); Wheeling, W. Va., Sept. 1, 1907.
- REYNAUD**, Paul (French statesman); Barcelona, Fr., Oct. 15, 1878.
- REYNOLDS**, Allie (baseball player); Bethany, Okla., Feb. 10, 1919.
- REYNOLDS**, Debbie (Mary Reynolds) (actress); El Paso, Tex., Apr. 1, 1932.
- RHEE**, Syngman (President, South Korea); Seoul, Kor., Mar. 26, 1875.
- RICE**, Elmer (Elmer Reizenstein) (dramatist); New York City, Sept. 28, 1892.
- RICHARD**, Maurice (hockey player); Montreal, Que., Can., Aug. 4, 1921.
- RICHARDS**, Paul (baseball manager); Waxahachie, Tex., Nov. 21, 1908.
- RICHARDS**, Vincent (tennis player); New York City, Mar. 20, 1903.
- RICHARDSON**, Sir Ralph (actor); Cheltenham, Eng., Dec. 19, 1902.
- RICKENBACKER**, Eddie (Edward V.) (airline executive); Columbus, Ohio, Oct. 8, 1890.
- RICKEY**, Branch (baseball executive); Stockdale, Ohio, Dec. 20, 1881.
- RIDGWAY**, Gen. Matthew B. (Army officer, U. S.); Ft. Monroe, Va., Mar. 3, 1895.
- RINEHART**, Mary Roberts (novelist); Pittsburgh, Pa.
- RITCHARD**, Cyril (actor); Sydney, Australia, Dec. 1, 1898.
- RITTER**, Thelma (actress); Brooklyn, N. Y., 1905.

- RIVERA, Diego** (painter); Guanajuato, Mex., Dec. 8, 1886.
- RIZZUTO, Phil** (baseball player); New York City, Sept. 25, 1918.
- ROARK, Helen Wills Moody** (tennis player); Centerville, Calif., Oct. 6, 1905.
- ROBBINS, Jerome** (Jerome Rabinowitz) (choreographer); NYC, Oct. 11, 1918.
- ROBERTS, Robin** (baseball player); Springfield, Ill., Sept. 30, 1926.
- ROBESON, Paul** (baritone); Princeton, N. J., Apr. 9, 1898.
- ROBINSON, Edward G.** (Emmanuel Goldenberg) (actor); Bucharest, Rum., Dec. 12, 1893.
- ROBINSON, Frank** (baseball player); Beaumont, Tex., Aug. 31, 1935.
- ROBINSON, Jackie** (baseball player); Cairo, Ga., Jan. 31, 1919.
- ROBINSON, Ray** (boxer); Detroit, Mich., May 3, 1920.
- ROBSON, Flora** (actress); South Shields, Eng., Mar. 28, 1902.
- ROCHESTER** (Eddie Anderson) (comedian); Oakland, Calif., Sept. 18, 1905.
- ROCKEFELLER, David** (business executive); New York City, June 12, 1915.
- ROCKEFELLER, John D., Jr.** (industrialist); Cleveland, Ohio, Jan. 29, 1874.
- ROCKEFELLER, Laurance S.** (business executive); New York City, May 26, 1910.
- ROCKEFELLER, Nelson A.** (Administrative Assistant to President, U. S.); Bar Harbor, Maine, July 8, 1908.
- ROCKEFELLER, Winthrop** (business executive); New York City, May 1, 1912.
- ROCKWELL, Norman** (illustrator); New York City, Feb. 3, 1894.
- RODGERS, Richard** (song writer); New York City, June 28, 1902.
- RODZINSKI, Artur** (orchestra conductor); Spalato, Dalmatia, Jan. 2, 1892.
- ROGERS, Buddy** (Charles) (actor); Olathe, Kans., Aug. 13, 1904.
- ROGERS, Ginger** (Virginia McMath) (actress); Independence, Mo., July 16, 1911.
- ROGERS, Roy** (Leonard Slye) (actor); Cincinnati, Ohio, Nov. 5, 1912.
- ROGERS, Will, Jr.** (actor); New York City, Oct. 20, 1911.
- ROMAINS, Jules** (Louis Farigoule) (novelist); Saint-Julien Chaptueil, Fr., Aug. 26, 1885.
- ROMAN, Ruth** (actress); Boston, Mass., Dec. 23, 1924.
- ROME, Harold** (song writer); Hartford, Conn., May 27, 1908.
- ROMERO, Cesar** (actor); New York City, Feb. 15, 1907.
- ROMULO, Carlos P.** (Philippine statesman); Manila, Phil., Jan. 14, 1899.
- ROONEY, Mickey** (Joe Yule, Jr.) (actor); Brooklyn, N. Y., Sept. 23, 1922.
- ROOSEVELT, Eleanor** (U. S. statesman); New York City, Oct. 11, 1884.
- ROSE, Billy** (Wm. S. Rosenberg) (stage producer); New York City, Sept. 6, 1899.
- ROSEN, Al** (Albert) (baseball player); Spartanburg, S. C., Mar. 1, 1925.
- ROSS, Lanny** (singer); Seattle, Wash., Jan. 19, 1906.
- ROSSELINI, Roberto** (movie director); Rome, It., May 8, 1906.
- ROUAULT, Georges** (painter); Paris, Fr., May 27, 1871.
- RUBINSTEIN, Artur** (pianist); Warsaw, Pol., Jan. 28, 1889.
- RUGGLES, Charles** (actor); Los Angeles, Calif., Feb. 8, 1892.
- RUSSELL, Bertrand** (philosopher); Trelleck, Eng., May 18, 1872.
- RUSSELL, Jane** (actress); Bemidji, Minn., June 21, 1921.
- RUSSELL, Rosalind** (actress); Waterbury, Conn., June 4, 1912.
- RYAN, Robert** (actor); Chicago, Ill., Nov. 11, 1913.
- SABLON, Jean** (singer); Paris, Fr., Mar. 25, 1912.
- SACKVILLE-WEST, Victoria** (poet & novelist); Sevenoaks, Eng., Mar. 9, 1892.
- SADDLER, Sandy** (Joe) (boxer); Boston, Mass., June 28, 1926.
- SAINT, Eva Marie** (actress); Newark, N. J., July 4, 1924.
- ST. DENIS, Ruth** (Ruth Denis) (dancer); Newark, N. J., Jan. 20, 1880.
- ST. LAURENT, Louis Stephen** (Canadian statesman); Compton, Que., Can., Feb. 1, 1882.
- SALAZAR, António de Oliveira** (Premier, Portugal); Santa Comba, Port., 1889.
- SALINGER, J. D.** (novelist); New York City, Jan. 1, 1919.
- SALK, Jonas** (physician); New York City, Oct. 28, 1914.
- SANDBURG, Carl** (poet & biographer); Galesburg, Ill., Jan. 6, 1878.
- SANDE, Earl** (horse trainer); Groton, S. Dak., Nov. 19, 1898.
- SANDERS, George** (actor); St. Petersburg, Rus., 1906.
- SARAZEN, Gene** (golfer); Harrison, N. Y., Feb. 27, 1902.
- SARNOFF, David** (radio executive); Uzman, Rus., Feb. 27, 1891.
- SAROYAN, William** (story writer & dramatist); Fresno, Calif., Aug. 31, 1908.
- SARTRE, Jean-Paul** (philosopher); Paris, Fr., June 21, 1905.
- SAVO, Jimmie** (entertainer); New York City, 1895.
- SAYÃO, Bidú** (soprano); Rio de Janeiro, Braz., May 11, 1906.
- SCHAEFER, Jake** (billiards player); Chicago, Ill., Oct. 18, 1894.
- SCHARY, Dore** (movie producer); Newark, N. J., Aug. 31, 1905.
- SCHIAPARELLI, Elsa** (fashion designer); Rome, It.
- SCHILDKRAUT, Joseph** (actor); Vienna, Aus., Mar. 22, 1895.
- SCHIPA, Tito** (tenor); Lecce, It., Jan. 2, 1890.
- SCHLESINGER, Arthur M., Jr.** (historian); Columbus, Ohio, Oct. 15, 1917.
- SCHLESINGER, Arthur M., Sr.** (historian); Xenia, Ohio, Feb. 27, 1888.
- SCHOENDIENST, Al** (Albert) (baseball player); Germantown, Ill., Feb. 2, 1923.
- SCHULBERG, Budd** (novelist); New York City, Mar. 27, 1914.
- SCHUMAN, Robert** (French statesman); Luxemburg, Luxem., June 29, 1886.

- SCHUMAN, William** (composer); New York City, Aug. 4, 1910.
- SCHWARTZ, Maurice** (actor); Sedikow, Ukr., June 18, 1890.
- SCHWARZKOPF, Elisabeth** (soprano); Jarotschin, Posen, Ger., Dec. 9, 1915.
- SCHWEITZER, Albert** (organist, physician & philosopher); Kayserburg, Alsace, Jan. 14, 1875.
- SCORE, Herb** (baseball player); Rosedale, N. Y., June 7, 1933.
- SCOTT, Barbara Ann** (skater); Ottawa, Can., May 9, 1928.
- SCOTT, Hazel** (pianist); Port of Spain, Trin., June 11, 1920.
- SCOTT, Martha** (actress); Jamesport, Mo., Sept. 22, 1916.
- SCOTT, Randolph** (actor); Orange Co., Va., Jan. 23, 1903.
- SCOTT, Raymond** (band leader); Brooklyn, N. Y., Sept. 10, 1909.
- SCOTT, Zachary** (actor); Austin, Tex., Feb. 24, 1914.
- SEABORG, Glenn T.** (nuclear chemist); Ishpeming, Mich., Apr. 19, 1912.
- SEATON, Frederick A.** (Secy. of Int., U. S.); Washington, D. C., Dec. 11, 1909.
- SEDGMAN, Frank** (tennis player); Mont Albert, Victoria, Austr., Oct. 29, 1927.
- SEGAL, Vivienne** (singer); Philadelphia, Pa., 1897.
- SEGOVIA, Andrés** (guitarist); Linares, Sp., Feb. 18, 1894.
- SEGURA, Francisco** (tennis player); Guayaquil, Ec., June 20, 1921.
- SEIXAS, E. Victor, Jr.** (tennis player); Philadelphia, Pa., Aug. 30, 1923.
- SELZNICK, David O.** (movie producer); Pittsburgh, Pa., May 10, 1902.
- SERKIN, Rudolf** (pianist); Eger, Boh., Mar. 28, 1903.
- SESSIONS, Roger** (composer); Brooklyn, N. Y., Dec. 28, 1896.
- SCHANTZ, Bobby** (baseball player); Pottstown, Pa., Sept. 26, 1925.
- SHAPLEY, Harlow** (astronomer); Nashville, Mo., Nov. 2, 1885.
- SHARETT, Moshé** (Moshé Shertok) (Israeli statesman); Kherson, Rus., Oct. 3, 1894.
- SHAUGHNESSY, Frank J.** (baseball executive); Albion, Ill., Apr. 8, 1885.
- SHAW, Artie** (clarinetist); New York City, May 23, 1910.
- SHAW, Irwin** (dramatist & novelist); New York City, Feb. 27, 1913.
- SHAW, Robert** (choral director); Red Bluff, Calif., Apr. 30, 1916.
- SHEARER, Moira** (Moira Shearer King) (ballerina); Dunfermline, Ffies., Scot., Jan. 17, 1926.
- SHEARER, Norma** (actress); Montreal, Can., Aug. 10, 1902.
- SHEEAN, Vincent** (novelist & essayist); Panama, Ill., Dec. 5, 1899.
- SHEEN, Fulton J.** (clergyman & author); El Paso, Ill., May 8, 1895.
- SHERIDAN, Ann** (actress); Denton, Tex., Feb. 21, 1915.
- SHERIFF, Robert** (dramatist); Kingston-on-Thames, Eng., June 6, 1896.
- SHOEMAKER, Willie** (jockey); Fabens, Tex., Aug. 19, 1931.
- SHOLOKHOV, Mikhail** (novelist); Veshenskaya, Rus., 1905.
- SHORE, Dinah** (singer); Winchester, Tenn., Mar. 1, 1917.
- SHOSTAKOVICH, Dmitri** (composer); St. Petersburg, Rus., Sept. 26, 1906.
- SHRINER, Herb** (comedian); Toledo, Ohio, May 29, 1918.
- SHULMAN, Max** (humorist); St. Paul, Minn., Mar. 14, 1919.
- SHUMLIN, Herman** (theatrical producer); Atwood, Colo., Dec. 6, 1898.
- SIDNEY, Sylvia** (Sophia Koskow) (actress); New York City, Aug. 8, 1910.
- SIKORSKY, Igor I.** (aircraft designer); Klenov, Rus., May 25, 1889.
- SILONE, Ignazio** (Secondo Tranquilli) (novelist); Pescina dei Marsi, It., May 1, 1900.
- SILVERS, Phil** (comedian); Brooklyn, N. Y., May 11, 1912.
- SIMENON, Georges** (Georges Sim) (novelist); Liège, Belg., Feb. 13, 1903.
- SIMMONS, Curt** (baseball player); Egypt, Pa., May 19, 1929.
- SIMMONS, Jean** (actress); Crouch Hill, London, Eng., Jan. 31, 1929.
- SIMONSON, Lee** (stage designer); New York City, June 26, 1888.
- SINATRA, Frank** (singer & actor); Hoboken, N. J., Dec. 12, 1917.
- SINCLAIR, Upton** (novelist); Baltimore, Md., Sept. 20, 1878.
- SIQUEIROS, David** (painter); Mexico, 1894.
- SITWELL, Edith** (poet); Scarborough, Eng., 1887.
- SITWELL, Sir Osbert** (poet & satirist); London, Eng., Dec. 6, 1892.
- SKELTON, Red** (Richard) (comedian); Vincennes, Ind., July 18, 1913.
- SKINNER, Cornelia Otis** (actress); Chicago, Ill., May 30, 1901.
- SLAUGHTER, Enos** (baseball player); Rochester, N. C., Apr. 27, 1916.
- SLEZAK, Walter** (actor); Vienna, Aus., Mar. 3, 1902.
- SLOAN, Alfred P., Jr.** (business executive); New Haven, Conn., May 23, 1875.
- SMITH, Betty** (novelist); Brooklyn, N. Y., Dec. 15, 1904.
- SMITH, H. Allen** (humorist); McLeansboro, Ill., Dec. 19, 1907.
- SMITH, Kate** (Kathryn) (singer); Washington, D. C., 1910.
- SMITH, Kent** (actor); Smithville, Maine, Mar. 19, 1907.
- SMITH, Lillian** (novelist); Jasper, Fla., 1885.
- SMITH, Red** (Walter) (sports writer); Greenvale, Wis., Sept. 25, 1905.
- SMYTHE, Conn** (hockey executive); Toronto, Ont., Can., Feb. 1, 1895.
- SNEAD, Sam** (golfer); Hot Springs, Va., Mar. 27, 1912.
- SNIDER, Duke** (Edwin) (baseball player); Los Angeles, Calif., Sept. 19, 1926.
- SOTHERN, Ann** (Harriette Lake) (actress); Valley City, N. Dak., Jan. 22, 1911.
- SPAACK, Paul Henri** (Belgian statesman); Brussels, Belg., Jan. 25, 1899.
- SPAHN, Warren** (baseball player); Buffalo, N. Y., Apr. 23, 1921.

- SPEAKER**, Tris (baseball player); Hubbard, Tex., Apr. 4, 1888.
- SPENDER**, Stephen (poet); nr. London, Eng., Feb. 28, 1909.
- SPEWACK**, Bella (dramatist); Hungary, 1899.
- SPEWACK**, Sam (dramatist); Russia, 1899.
- SPILLANE**, Mickey (Frank Spillane) (novelist); Brooklyn, N. Y., Mar. 9, 1918.
- SPOCK**, Benjamin (pediatrician); New Haven, Conn., May 2, 1903.
- SPROUL**, Robert G. (educator); San Francisco, Calif., May 22, 1891.
- STAGG**, A. Alonzo (football coach); West Orange, N. J., Aug. 16, 1862.
- STANLEY**, Kim (Patricia Reid) (actress); Tularosa, N. Mex., Feb. 11, 1925.
- STANWYCK**, Barbara (Ruby Stevens) (actress); Brooklyn, N. Y., July 16, 1907.
- STASSEN**, Harold E. (U. S. administrator); West St. Paul, Minn., Apr. 13, 1907.
- STEBER**, Eleanor (soprano); Wheeling, W. Va., July 17, 1916.
- STEFANSSON**, Vilhjalmur (explorer); Arnes, Can., Nov. 3, 1879.
- STEICHEN**, Edward (photographer); Luxemburg, May 27, 1879.
- STEINBECK**, John (novelist); Salinas, Calif., Feb. 27, 1902.
- TEINBERG**, Saul (cartoonist); Ramnic-Sarat, Rum., June 15, 1914.
- TENGEL**, Casey (Charles D.) (baseball manager); Kansas City, Mo., July 30, 1891.
- TERN**, Isaac (violinist); Kreminecz, Rus., July 21, 1920.
- TEVENS**, George (movie producer); Oakland, Calif., 1905.
- TEVENS**, Mark (actor); Cleveland, Ohio, Dec. 13.
- TEVENS**, Risé (mezzo-soprano); New York City, June 11, 1913.
- TEVENSON**, Adlai E. (U. S. statesman); Los Angeles, Calif., Feb. 5, 1900.
- TEWART**, James (actor); Indiana, Pa., May 20, 1908.
- TICKNEY**, Dorothy (actress); Dickinson, N. Dak., June 21, 1900.
- TOKES**, Thomas L. (journalist); Atlanta, Ga., Nov. 1, 1898.
- TOKOWSKI**, Leopold (orchestra conductor); London, Eng., Apr. 18, 1882.
- TOBE**, Irving (biographer), San Francisco, Calif., July 14, 1903.
- TONG**, Philip (novelist); Keosauqua, Iowa, Jan. 27, 1899.
- TRANAHAH**, Frank R. (golfer); Toledo, Ohio, Aug. 5, 1922.
- TRAUSS**, Lewis L. (AEC Chmn., U. S.); Charleston, W. Va., Jan. 31, 1896.
- TRAVINSKY**, Igor (composer); Oranienbaum, Rus., June 17, 1882.
- REETER**, Edward (novelist); New York City, Aug. 1, 1891.
- TRIJDOM**, Johannes Gerhardus (South African statesman); Willowmore, Cape Colony, July 14, 1893.
- TRONG**, Ken (football player); West Haven, Conn., Apr. 21, 1906.
- TRIVIVANT**, Tom (baseball player); Gordon, Kans., Apr. 28, 1930.
- TURGES**, Preston (dramatist & director); Chicago, Ill., Aug. 29, 1898.
- SUCKOW**, Ruth (novelist); Hawarden, Iowa, Aug. 6, 1892.
- SULLAVAN**, Margaret (actress); Norfolk, Va., May 16, 1911.
- SULLIVAN**, Barry (Patrick Barry) (actor); New York City, Aug. 29, 1912.
- SULLIVAN**, Ed (columnist); New York City, Sept. 28, 1902.
- SULLIVAN**, Frank (baseball player); Burbank, Calif., Jan. 23, 1930.
- SULLIVAN**, Frank (humorist); Saratoga Springs, N. Y., Sept. 22, 1892.
- SULZBERGER**, Arthur H. (publisher); New York City, Sept. 12, 1891.
- SUMMERFIELD**, Arthur E. (Postmaster General of U. S.); Pinconning, Mich., Mar. 17, 1899.
- SWANSON**, Gloria (Josephine Swenson) (actress); Chicago, Ill., Mar. 27, 1898.
- SWARTHOUT**, Gladys (mezzo-soprano); Deepwater, Mo., Dec. 25, 1904.
- SWOPE**, Herbert Bayard (journalist); St. Louis, Mo.
- SZELL**, George (orchestra conductor); Budapest, Hung., June 7, 1897.
- SZIGETI**, Joseph (violinist); Budapest, Hung., Sept. 5, 1892.
- TAGLIAVINI**, Ferruccio (tenor); Reggio Emilia, It., Aug. 14, 1913.
- TALBERT**, Billy (tennis player); Cincinnati, Ohio, Sept. 4, 1918.
- TALBURT**, Harold M. (cartoonist); Toledo, Ohio, Feb. 19, 1895.
- TALLCHIEF**, Maria (ballerina); Fairfax, Okla., Jan. 24, 1925.
- TANDY**, Jessica (actress); London, Eng., June 7, 1909.
- TATE**, Allen (poet); Winchester, Ky., Nov. 19, 1899.
- TAYLOR**, Deems (composer); New York City, Dec. 22, 1885.
- TAYLOR**, Elizabeth (actress); London, Eng., Feb. 27, 1932.
- TAYLOR**, Gen. Maxwell D. (Chief of Staff, U. S. Army); Keytesville, Mo., Aug. 26, 1901.
- TAYLOR**, Robert (S. Arlington Brugh) (actor); Filley, Nebr., Aug. 5, 1911.
- TEBALDI**, Renata (soprano); Pesaro, It., Jan. 2, 1922.
- TEBBETTS**, Birdie (George R.) (baseball manager); Nashua, N. H., Nov. 10, 1914.
- TELLER**, Edward (physicist); Budapest, Hung., Jan. 15, 1908.
- TEMPLE**, John (baseball player); Lexington, N. C., Aug. 8, 1929.
- TEMPLE**, Shirley (actress); Santa Monica, Calif., Apr. 23, 1928.
- TEMPLETON**, Alec (pianist); Cardiff, Wales, July 4, 1910.
- TEYTE**, Maggie (soprano); Wolverhampton, Eng., Apr. 17, 1891.
- THEBOM**, Blanche (mezzo-soprano); Monessen, Pa., Sept. 19, 1919.
- THOMAS**, Danny (comedian); Deerfield, Mich., Jan. 6, 1914.
- THOMAS**, Frank (baseball player); Pittsburgh, Pa., June 11, 1921.
- THOMAS**, John Charles (baritone); Meyersdale, Pa., Sept. 6, 1891.

- THOMAS, Lowell (lecturer & author); Wood-
ington, Ohio, Apr. 6, 1892.
- THOMAS, Norman (Socialist leader); Marion,
Ohio, Nov. 20, 1884.
- THOMPSON, Randall (composer); New York
City, Apr. 21, 1899.
- THOMSON, Virgil (composer); Kansas City,
Mo., Nov. 25, 1896.
- THORBERG, Kerstin (contralto); Venjan,
Swed., May 19, 1906.
- THOREZ, Maurice (French Communist
leader); Noyelles-Gaudault, Pas-de-Calais,
Fr., Apr. 28, 1900.
- THORNDIKE, Dame Sybil (actress); Gains-
borough, Lincs., Eng., Oct. 24, 1882.
- THURBER, James (humorist); Columbus,
Ohio, Dec. 8, 1894.
- TIBBETT, Lawrence (baritone); Bakersfield,
Calif., Nov. 16, 1896.
- TIERNEY, Gene (actress); Brooklyn, N. Y.,
Nov. 20, 1920.
- TITO (Josip Brozovich or Broz) (President,
Yugoslavia); Croatia, May 25, 1892.
- TODD, Ann (actress); Hartford, Ches., Eng.,
Jan. 24, 1910.
- TODD, Mike (Avrom Hirsch Goldbogen)
(movie producer); Minneapolis, Minn.,
June 22, 1909.
- TODD, Richard (actor); Dublin, Ire., 1920.
- TOGLIATTI, Palmiro (Italian Communist
leader); Genoa, It., Mar. 26, 1893.
- TONE, Franchot (actor); Niagara Falls, N.
Y., Feb. 27, 1905.
- TOUREL, Jennie (mezzo-soprano); Montreal,
Can., June 22, 1910.
- TOYNBEE, Arnold J. (historian); London,
Eng., Apr. 14, 1889.
- TRABERT, Tony (tennis player); Cincinnati,
Ohio, Aug. 16, 1930.
- TRACY, Lee (actor); Atlanta, Ga., Apr. 14,
1898.
- TRACY, Spencer (actor); Milwaukee, Wis.,
Apr. 5, 1900.
- TRAUBEL, Helen (soprano); St. Louis, Mo.,
June 16, 1903.
- TRAUTMAN, George M. (baseball executive);
Bucyrus, Ohio, Jan. 11, 1890.
- TREVOR, Claire (actress); New York City,
Mar. 8, 1909.
- TRUCKS, Virgil (baseball player); Birming-
ham, Ala., Apr. 26, 1919.
- TRUEX, Ernest (actor); Kansas City, Mo.,
Sept. 19, 1890.
- TRUJILLO Y MOLINA, Rafael (Dominican
Republic statesman); San Cristóbal, Oct.
24, 1891.
- TRUMAN, Harry S. (U. S. statesman); Lamar,
Mo., May 8, 1884.
- TRUMAN, Margaret (soprano); Independence,
Mo., Feb. 17, 1924.
- TUCKER, Richard (tenor); New York City,
Aug. 28, 1914.
- TUCKER, Sophie (Sophie Abuza) (enter-
tainer); Russia, 1884.
- TUDOR, Anthony (choreographer); London,
Eng., Apr. 4, 1909.
- TUNNEY, Gene (James J.) (boxer); New
York City, May 25, 1898.
- TURNER, Lana (Julia Jean Turner) (actress);
Wallace, Idaho, Feb. 8, 1920.
- TURNESA, Willie (golfer); Elmsford, N. Y.,
Jan. 29, 1914.
- TWINING, Gen. Nathan F. (Chmn., Jc
Chiefs of Staff, U. S.); Monroe, Wis., O
11, 1897.
- UNTERMEYER, Louis (poet & anthologist
New York City, Oct. 1, 1885.
- UREY, Harold C. (chemist); Walkerton, In
Apr. 29, 1893.
- USTINOV, Peter (dramatist & actor); L
don, Eng., 1921.
- VALLEE, Rudy (Hubert) (actor & ba
leader); Island Pond, Vermont, July
1901.
- VANDERBILT, Alfred G. (horse racing
ecutive); London, Eng., Sept. 22, 1915.
- VAN DOREN, Mark (poet & critic); Hd
Ill., June 13, 1894.
- VAN DRUTEN, John (dramatist); Lond
Eng., June 1, 1901.
- VAUGHN-WILLIAMS, Ralph (compose
Down Ampney, Eng., Oct. 12, 1872.
- VERA-ELLEN (Vera-Ellen Rohe) (actres
Cincinnati, Ohio, Feb. 16.
- VERDON, Gwen (actress); Culver City, Ca
VIDOR, King (movie director & produce
Galveston, Tex., Feb. 8, 1895.
- VILLA-LOBOS, Heitor (composer); Rio
Janeiro, Braz., Mar. 5, 1884.
- VIRDON, Bill (baseball player); Hazel Pa
Mich., June 9, 1931.
- VLAMINCK, Maurice de (painter); Paris,
Apr. 4, 1876.
- WAGNER, Robert (actor); Detroit, MI
Feb. 10, 1930.
- WAGNER, Robert F. (Mayor, NYC); N
York City, Apr. 20, 1910.
- WALCOTT, Jersey Joe (Arnold Crea
(boxer); Merchantville, N. J., Jan. 31, 1
WALKER, Mickey (boxer); Elizabeth, N.
July 13, 1901.
- WALKER, Nancy (Ann Myrtle Swoyer) (t
tress); Philadelphia, Pa.
- WALLACE, DeWitt (publisher); St. P
Minn., Nov. 12, 1889.
- WALLACE, Henry A. (U. S. statesman); A
Co., Iowa, Oct. 7, 1888.
- WALLACE, Mike (TV personality) (My
Leon Wallace); Brookline, Mass., May
1918.
- WALTARI, Mika (novelist); Helsinki, F
Sept. 19, 1908.
- WALTER, Bruno (Bruno Walter Schlesing
(orchestra conductor); Berlin, Ger., S
17, 1876.
- WARD, Barbara (writer & economist); Y
Eng., May 23, 1914.
- WARING, Fred (band leader); Tyrone,
June 9, 1900.
- WARNER, Sylvia Townsend (novelist & po
Harrow-on-the-Hill, Eng., 1893.
- WARREN, Earl (U. S. jurist); Los Ang
Calif., Mar. 19, 1891.
- WARREN, Leonard (baritone); New Y
City, Apr. 21, 1911.
- WARREN, Robert Penn (novelist); Guth
Ky., Apr. 24, 1905.
- WATERS, Ethel (actress & singer); Che
Pa., Oct. 31, 1900.
- WAUGH, Alec (Alexander Raban Wat
(novelist); London, Eng., July 8, 1899.

- WAUGH, Evelyn** (novelist); London, 1903.
WAYNE, David (actor); Traverse City, Mich., Jan. 30, 1914.
WAYNE, John (Marion Michael Morrison) (actor); Winterset, Iowa, May 26, 1907.
WEBB, Clifton (actor); Indiana, 1891.
WEBB, Jack (actor); Santa Monica, Calif., Apr. 2, 1920.
WEBSTER, Margaret (actress & director); New York City, Mar. 15, 1905.
WEDE, Robert (baritone) (Robert Wiede-feld); Baltimore, Md., Feb. 22, 1903.
WEEKS, Sinclair (Secy. of Commerce, U. S.); West Newton, Mass., June 15, 1893.
WELCH, Joseph N. (lawyer); Pringhar, Iowa, Oct. 22, 1890.
WELK, Lawrence (band leader); Strasburg, N. Dak., Mar. 11, 1903.
WELLES, Orson (actor & director); Kenosha, Wis., May 6, 1915.
WELTY, Eudora (novelist); Jackson, Miss., Apr. 13, 1909.
WESCOTT, Glenway (novelist); Kewas-kum, Wis., Apr. 11, 1901.
WEST, Mae (actress); Brooklyn, N. Y., Aug. 17, 1892.
WEST, Rebecca (Cicily Fairfield) (novelist); Edinburgh, Scot., Dec. 25, 1892.
WHITE, E. B. (Elwyn Brooks) (writer); Mt. Vernon, N. Y., July 11, 1899.
WHITEMAN, Paul (band leader); Denver, Colo., 1891.
WHITNEY, C. V. (horse racing executive); New York City, Feb. 20, 1899.
WHITNEY, John Hay (U. S. Ambassador); Ellsworth, Me., Aug. 17, 1904.
WHITTAKER, Charles E. (U. S. jurist); Troy, Mo., Feb. 22, 1901.
WHORF, Richard (actor); Winthrop, Mass.
WIDENER, George D. (horse racing execu-tive); Philadelphia, Pa., Mar. 11, 1889.
WIDMARK, Richard (actor); Sunrise, Minn., Dec. 26, 1914.
WILDE, Cornel (actor); New York City, Oct. 13, 1915.
WILDER, Billy (movie director); Vienna, Aus., June 22, 1906.
WILDER, Thornton (novelist); Madison, Wis., Apr. 17, 1897.
WILDING, Michael (actor); Westcliff, Essex, Eng., July 23, 1912.
WILLARD, Jess (boxer); Pottawatomie Co., Kans., Dec. 29, 1883.
WILLIAMS, Emlyn (dramatist); Mostyn, Wales, Nov. 26, 1905.
WILLIAMS, Esther (swimmer & actress); Inglewood, Calif., Aug. 8, 1923.
WILLIAMS, Gluyas (cartoonist); San Fran-cisco, Calif., July 23, 1888.
WILLIAMS, Ted (baseball player); San Diego, Calif., Oct. 30, 1918.
WILLIAMS, Tennessee (Thomas L. Williams) (dramatist); Columbus, Miss., Mar. 26, 1914.
WILLIAMS, William Carlos (poet); Ruther-ford, N. J., Sept. 17, 1883.
WILSON, Charles Edward (industrialist); New York City, Nov. 18, 1886.
WILSON, Charles Erwin (Former Secy. of De-fense, U. S.); Minerva, Ohio, July 18, 1890.
WILSON, Edmund (literary critic); Red Bank, N. J., May 8, 1895.
WILSON, Marie (actress); Anaheim, Calif., Aug. 19, 1916.
WINCHELL, Paul (ventriloquist); New York City, Dec. 21, 1923.
WINCHELL, Walter (columnist); New York City, Apr. 7, 1897.
WINDSOR, Duchess of (Bessie Wallis War-field); Blue Ridge Summit, Pa., June 19, 1896.
WINDSOR, Duke of (formerly King Edward VIII, Gr. Brit.); Richmond Park, Eng., June 23, 1894.
WINNINGER, Charles (actor); Athens, Wis., May 26, 1884.
WINTERS, Jonathan (comedian); Dayton, Ohio, Nov. 11, 1925.
WINTERS, Shelley (Shirley Schrift) (actress); St. Louis, Ill., Aug. 18, 1922.
WOOD, Peggy (actress); Brooklyn, N. Y., Feb. 9, 1892.
WOOLLEY, Monte (Edgar) (actor); New York City, Aug. 17, 1888.
WORTMAN, Denys (cartoonist); Saugerties, N. Y., May 1, 1887.
WOUK, Herman (novelist); New York City, May 27, 1915.
WRIGHT, Frank Lloyd (architect); Richland Center, Wis., June 8, 1869.
WRIGHT, Richard (novelist); nr. Natchez, Miss., Sept. 4, 1908.
WRIGHT, Teresa (actress); New York City, Oct. 27, 1918.
WYATT, Jane (actress); Campgaw, N. J., Aug. 12, 1912.
WYETH, Andrew (painter); Chadds Ford, Pa., July 12, 1917.
WYLER, William (movie director); Mulhouse, Fr., July 1, 1902.
WYLIE, Philip (novelist); Beverly, Mass., May 12, 1902.
WYMAN, Jane (Sarah Fulks) (actress); St. Joseph, Mo., Jan. 4, 1914.
WYNN, Ed (Edwin Leopold) (comedian); Philadelphia, Pa., Nov. 9, 1886.
WYNN, Keenan (actor); New York City, July 27, 1916.
YERBY, Frank (novelist); Augusta, Ga., Sept. 5, 1916.
YOUNG, Alan (Angus Young) (actor); No. Shields, Northum., Eng., Nov. 19, 1919.
YOUNG, Loretta (Gretchen) (actress); Salt Lake City, Utah, Jan. 6, 1913.
YOUNG, Robert (actor); Chicago, Ill., Feb. 22, 1907.
YOUNG, Robert R. (railroad executive); Can-adian, Tex., Feb. 14, 1897.
YURKA, Blanche (actress); St. Paul, Minn., June 19, 1893.
ZANUCK, Darryl F. (movie director); Wahoo, Nebr., Sept. 5, 1902.
ZHUKOV, Marshal Georgi (Red Army Chief); Asadako-Zovodski, Rus., 1896.
ZIMBALIST, Efreim (violinist); Rostov-on-Don, Rus., Apr. 9, 1889.
ZORACH, William (sculptor); Eurburg, Lith., Feb. 28, 1887.
ZUKOR, Adolph (movie producer); Ricse, Hung., Jan. 7, 1873.
ZWEIG, Arnold (novelist); Grosz-Glogau, Silesia, Nov. 10, 1887.

★ WHO WAS WHO ★

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For the Presidents of the United States, consult the entry Presidents in the index. For the Rulers of England, France, Germany and Russia, consult the entry Rulers. In many instances below, original name or form of the name of the individual is shown in parentheses.

- ABELARD**, Peter (Pierre Abélard) (philosopher); b. near Nantes, Fr. (1079-1142).
ADAMS, Charles Francis (diplomat); b. Boston, Mass. (1807-1886).
ADAMS, Henry Brooks (historian); b. Boston, Mass. (1838-1918).
ADAMS, James Truslow (historian); b. Brooklyn, N. Y. (1878-1949).
ADAMS, Maude (Maude Kiskadden) (actress); b. Salt Lake City, Utah (1872-1953).
ADAMS, Samuel (American Revolutionary patriot); b. Boston, Mass. (1722-1803).
ADDAMS, Jane (social worker); b. Cedarville, Ill. (1860-1935).
ADE, George (humorist); b. Kentland, Ind. (1866-1944).
ADLER, Alfred (psychoanalyst); b. Vienna, Aus. (1870-1937).
AESCHYLUS (dramatist); b. Eleusis, Attica (525-456 B.C.).
AESOP (fabulist); birthplace unknown (lived c. 600 B.C.).
ALCOTT, Louisa May (novelist); b. Germantown, Pa. (1832-1888).
ALDEN, John (American Pilgrim); b. England (1599?-1687).
ALEXANDER the Great (monarch & conqueror); b. Pella, Macedonia (356-323 B.C.).
ALGER, Horatio (author); b. Revere, Mass. (1834-1899).
ALLEN, Ethan (American Revolutionary soldier); b. Litchfield, Conn. (1738-1789).
ALLEN, Fred (John Florence Sullivan) (comedian); b. Cambridge, Mass. (1894-1956).
ANDERSEN, Hans Christian (fairy-tale writer); b. Odense, Den. (1805-1875).
ANTHONY, Mark (Marcus Antonius) (statesman); b. Rome (83?-30 B.C.).
ANTHONY, Susan Brownell (woman suffragist); b. Adams, Mass. (1820-1906).
AQUINAS, St. Thomas (philosopher); b. near Aquino, It. (1225?-1274).
ARCHIMEDES (physicist & mathematician); b. Syracuse, Sicily (287?-212 B.C.).
ARISTOPHANES (dramatist); b. Athens (448?-380 B.C.).
ARISTOTLE (philosopher); b. Stagira (384-322 B.C.).
ARNOLD, Benedict (American traitor); b. Norwich, Conn. (1741-1801).
ARNOLD, Matthew (poet & critic); b. Laleham, Mid., Eng. (1822-1888).
ASCH, Sholem (novelist); b. Kutno, Pol. (1880-1957).
ASTOR, John Jacob (financier); b. Waldorf, Ger. (1763-1848).
ATTILA (King of Huns, called "Scourge of God") (406?-453).
AUDUBON, John James (naturalist & artist); b. Haiti (1785-1851).
AUER, Leopold (violinist & teacher); Veszprim, Hung. (1845-1930).
AUGUSTINE, Saint (Aurelius Augustinus) (philosopher); b. Numidia (354-430).
AUGUSTUS (Gaius Octavius) (Roman emperor); b. Rome (63 B.C.-A.D. 14).
AUSTEN, Jane (novelist); b. Steventon Hamps., Eng. (1775-1817).
BACH, Johann Sebastian (composer); Eisenach, Ger. (1685-1750).
BACON, Francis (philosopher & essayist); b. London, England (1561-1626).
BACON, Roger (philosopher & scientist); Ilchester, Som., Eng. (1214?-1294).
BAEDEKER, Karl (travel-guidebook publisher); b. Essen, Ger. (1801-1859).
BALBOA, Vasco Núñez de (explorer); Jerez de los Caballeros, Sp. (1475-1517).
BALZAC, Honoré de (novelist); b. Tours, Fr. (1799-1850).
BANTING, Sir Frederick Grant (research physician); b. Canada (1891-1941).
BARA, Theda (Theodosia Goodman) (actress); b. Cincinnati, Ohio (1890-1955).
BARKLEY, Alben William (U. S. statesman); b. Graves Co., Ky. (1877-1956).
BARNUM, Phineas Taylor (showman); Bethel, Conn. (1810-1891).
BARRIE, Sir James Matthew (novelist dramatist); b. Kirriemuir, Forfarshire, Scot. (1860-1937).
BARRY, Philip (dramatist); b. Rochester, N. Y. (1896-1949).
BARRYMORE, John (actor); b. Philadelphia, Pa. (1882-1942).
BARRYMORE, Lionel (actor); b. Philadelphia, Pa. (1878-1954).
BARTÓK, Béla (composer); b. Nagyszeremiklos, Transylvania, Hung. (1881-1945).
BARTON, Clara (Clarissa Harlowe Barton) (social worker); b. Oxford, Mass. (1812-1912).
BAUDELAIRE, Charles Pierre (poet); b. Paris, Fr. (1821-1867).
BECKET, Thomas à (Archbishop of Canterbury); b. London, Eng. (1118?-1170).
BEDE, Saint (called "The Venerable Bede" (scholar); b. Monkwearmouth, Eng. (673-735).
BEECHER, Henry Ward (clergyman); b. Litchfield, Conn. (1813-1887).
BEERBOHM, Sir Max (author); b. London, Eng. (1872-1956).

- BEEHOVEN**, Ludwig van (composer); b. Bonn, Ger. (1770-1827).
- BELASCO**, David (dramatist & producer); b. San Francisco, Calif. (1854-1931).
- BELL**, Alexander Graham (inventor); b. Edinburgh, Scot. (1847-1922).
- BELLAMY**, Edward (author); b. Chicopee Falls, Mass. (1850-1898).
- BELLOWS**, George Wesley (painter & lithographer); b. Columbus, Ohio (1882-1925).
- BENCHLEY**, Robert Charles (humorist); b. Worcester, Mass. (1889-1945).
- BENEŠ**, Eduard (Czech statesman); b. Kožlany, Bohemia (1884-1948).
- BENÉT**, Stephen Vincent (poet & story writer); b. Bethlehem, Pa. (1898-1943).
- BENÉT**, William Rose (poet & novelist); b. Ft. Hamilton, N. Y. (1886-1950).
- BENJAMIN**, Judah Philip (Confederate statesman); b. St. Thomas, BWI (1811-1884).
- BENNETT**, Enoch Arnold (novelist & dramatist); b. Hanley, Staffs., Eng. (1867-1931).
- BENNETT**, James Gordon (editor); b. Keith, Banffshire, Scot. (1795-1872).
- BERLIOZ**, Louis Hector (composer); b. La Côte-St.-André, Fr. (1803-1869).
- BERNHARDT**, Sarah (Rosine Bernard) (actress); b. Paris, Fr. (1844-1923).
- BEVIN**, Ernest (British statesman); b. Somersetshire, Eng. (1881-1951).
- BIERCE**, Ambrose Gwinnett (journalist); b. Meigs Co., Ohio (1842-?1914).
- BISMARCK-SCHÖNHAUSEN**, Prince Otto Eduard Leopold von (German statesman); b. Schönhofen, Prus. (1815-1898).
- BIZET**, Georges (Alexandre César Léopold Bizet) (composer); b. Paris, Fr. (1838-1875).
- BLACKSTONE**, Sir William (jurist); b. London, Eng. (1723-1780).
- BLAKE**, William (poet & artist); b. London, Eng. (1757-1827).
- BLUM**, Léon (French statesman); b. Paris, Fr. (1872-1950).
- BOCCACCIO**, Giovanni (author); b. Paris, Fr. (1313-1375).
- BOGART**, Humphrey (actor); b. New York City (1900-1957).
- BOLÍVAR**, Simón (South American liberator); b. Caracas, Venez. (1783-1830).
- BOND**, Carrie (nee Jacobs) (composer of songs); b. Janesville, Wis. (1862-1946).
- BOONE**, Daniel (frontiersman); b. near Reading, Pa. (1734-1820).
- BOOTH**, Edwin Thomas (actor); b. Bel Air, Md. (1833-1893).
- BOOTH**, Evangeline Cory (religious leader); b. London, Eng. (1865-1950).
- BOOTH**, John Wilkes (actor; assassin of Lincoln); b. Hartford County, Md. (1838-1865).
- BOOTH**, William (called General Booth) (religious leader); b. Nottingham, Eng. (1829-1912).
- BORGIA**, Cesare (nobleman & soldier); b. Rome (1475?-1507).
- BORGIA**, Lucrezia (Duchess of Ferrara); b. Rome (1480-1519).
- BOSWELL**, James (diarist & biographer); b. Edinburgh, Scot. (1740-1795).
- BOTTICELLI**, Sandro (Alessandro di Mariano del Filipepi) (painter); b. Florence (1444?-1510).
- BOWIE**, James (soldier); b. Burke Co., Ga. (1799-1836).
- BRAHMS**, Johannes (composer); b. Hamburg, Ger. (1833-1897).
- BRAILLE**, Louis (teacher of blind); b. Coupvray, Fr. (1809-1852).
- BRANDEIS**, Louis Dembitz (jurist); b. Louisville, Ky. (1856-1941).
- BRICE**, Fanny (Fannie Borach) (comédienne); b. New York City (1892-1951).
- BRISBANE**, Arthur (journalist) b. Buffalo, N. Y. (1864-1936).
- BROMFIELD**, Louis (novelist); b. Mansfield, Ohio (1896-1956).
- BRONTË**, Charlotte (novelist); b. Thornton, Yorks., Eng. (1816-1855).
- BRONTË**, Emily Jane (novelist); b. Thornton, Yorks., Eng. (1818-1848).
- BROOKE**, Rupert (poet); b. Rugby, War., Eng. (1887-1915).
- BROWN**, Matthew Heywood Campbell (journalist); b. Brooklyn, N. Y. (1888-1939).
- BROWN**, John (abolitionist); b. Torrington, Conn. (1800-1859).
- BROWNING**, Elizabeth Barrett (poet); b. Coxhoe Hall, Durham, England (1806-1861).
- BROWNING**, Robert (poet); b. London, Eng. (1812-1889).
- BRUEGHEL**, Pieter (painter); b. near Breda, Flanders (1520-1569).
- BRUTUS**, Marcus Junius (Roman politician) (85?-42 B.C.).
- BRYAN**, William Jennings (orator & politician); b. Salem, Ill. (1860-1925).
- BRYANT**, William Cullen (poet & editor); b. Cummington, Mass. (1794-1878).
- BUDDHA**. See Gautama Buddha.
- BUFFALO BILL** (William Frederick Cody) (scout); b. Scott Co., Iowa (1846-1917).
- BUNYAN**, John (preacher & author); b. Elstow, Eng. (1628-1688).
- BURBANK**, Luther (horticulturist); b. Lancaster, Mass. (1849-1926).
- BURKE**, Edmund (statesman); b. Dublin, Ire. (1729-1797).
- BURNS**, Robert (poet); b. Alloway, Scot. (1759-1796).
- BURR**, Aaron (U. S. political leader); b. New-ark, N. J. (1756-1836).
- BUTLER**, Nicholas Murray (educator); b. Elizabeth, N. J. (1862-1947).
- BUTLER**, Samuel (author); b. Langar, Notts., Eng. (1835-1902).
- BYRD**, Richard E. (explorer); b. Winchester, Va. (1888-1957).
- BYRON**, George Gordon (6th Baron Byron) (poet); b. London, Eng. (1788-1824).
- CABOT**, John (Giovanni Caboto) (navigator); b. Genoa (1450-1498).
- CABOT**, Sebastian (navigator); b. Venice (1476?-1557).
- CAESAR**, Gaius Julius (Roman statesman); b. Rome (100?-44 B.C.).
- CALHARN**, Louis (Carl Henry Vogt) (actor); b. New York City (1895-1956).
- CALHOUN**, John Caldwell (statesman); b. near Calhoun Mills, S. C. (1782-1850).

- CALVIN, John** (Jean Chauvin) (religious reformer); b. Noyon, Picardy (1509-1564).
- CARDOZO, Benjamin Nathan** (jurist); b. New York City (1870-1938).
- CARLYLE, Thomas** (essayist & historian); b. Ecclefechan, Dumfriesshire, Scot. (1795-1881).
- CARNEGIE, Andrew** (industrialist); b. Dunfermline, Scot. (1835-1919).
- CARROLL, Lewis** (Charles Lutwidge Dodgson) (author & mathematician); b. Daresbury, Ches., Eng. (1832-1898).
- CARSON, Kit** (Christopher) (scout); b. Madison Co., Ky. (1809-1868).
- CARUSO, Enrico** (Errico) (tenor); b. Naples, It. (1873-1921).
- CARVER, George Washington** (botanist); b. Missouri (1864-1943).
- CARY, Joyce** (novelist); b. Londonderry, Ire. (1888-1957).
- CASANOVA DE SEINGALT, Giovanni Jacopo** (adventurer); b. Venice (1725-1798).
- CATHER, Willa Sibert** (novelist); b. Winchester, Va. (1876-1947).
- CATO, Marcus Porcius** (called Cato the Elder) (statesman); b. Tusculum (234-149 B.C.).
- CATT, Carrie Chapman** (nee Lane) (woman suffragist); b. Ripon, Wis. (1859-1947).
- CELLINI, Benvenuto** (goldsmith & sculptor); b. Florence (1500-1571).
- CERVANTES SAAVEDRA, Miguel de** (novelist); b. Alcalá de Henares, Sp. (1547-1616).
- CÉZANNE, Paul** (painter); b. Aix-en-Provence, Fr. (1839-1906).
- CHALIAPIN, Feodor Ivanovitch** (basso); b. Kazan, Rus. (1873-1938).
- CHAMPLAIN, Samuel de** (explorer); b. nr. Rochefort, Fr. (1567?-1635).
- CHANEY, Lon** (actor); b. Colorado Springs, Colo. (1883-1930).
- CHARLEMAGNE** (Holy Roman Emperor); birthplace unknown (742-814).
- CHAUCER, Geoffrey** (poet); b. London, Eng. (1340?-1400).
- CHEKHOV, Anton Pavlovich** (dramatist & story writer); b. Taganrog, Rus. (1860-1904).
- CHESTERTON, Gilbert Keith** (author); b. Kensington, Eng. (1874-1936).
- CHIPPENDALE, Thomas** (cabinetmaker); b. Otley, Eng. (1718?-1779).
- CHOPIN, Frédéric François** (composer); b. nr. Warsaw, Pol. (1810-1849).
- CICERO, Marcus Tullius** (orator & statesman); b. Arpinum, It. 106-43 B.C.).
- CLARK, William** (explorer); b. Caroline Co., Va. (1770-1838).
- CLAY, Henry** (statesman); b. Hanover Co., Va. (1777-1852).
- CLEMENCEAU, Georges** (statesman); b. Mouilleron-en-Pareds, Vendée, France (1841-1929).
- CLEMENS, S. L.** See Twain
- CLEOPATRA** (Queen of Egypt); b. Alexandria, Egy. (69-30 B.C.).
- COBB, Irvin Shrewsbury** (humorist); b. Paducah, Ky. (1876-1944).
- CODY, W. F.** See Buffalo Bill.
- COHAN, George Michael** (actor & dramatist); b. Providence, R. I. (1878-1942).
- COHEN, Morris Raphael** (philosopher & educator); b. Minsk, Rus. (1880-1947).
- COLERIDGE, Samuel Taylor** (poet); b. Ottery St. Mary, Dev., Eng. (1772-1834).
- COLLETTE** (Sidonie-Gabrielle Colette) (novelist); b. St.-Sauveur, Fr. (c.1873-1954).
- COLUMBUS, Christopher** (Cristoforo Colombo) (discoverer of America); b. Genoa (1451-1506).
- COMPTON, Karl Taylor** (physicist); b. Wooster, Ohio (1887-1954).
- CONFUCIUS** (K'ung Fu-tzu) (philosopher); b. Shantung prov., China (c. 551-479 B.C.).
- CONGREVE, William** (dramatist); b. Leeds, Eng. (1670-1729).
- CONRAD, Joseph** (Teodor Józef Konrad Korzeniowski) (novelist); b. Berdichev, Ukraine (1857-1924).
- COOPER, James Fenimore** (novelist); b. Burlington, N. J. (1789-1851).
- COOPER, Peter** (industrialist & philanthropist); b. New York City (1791-1883).
- COPERNICUS, Nicolaus** (Mikolaj Kopernik) (astronomer); b. Thorn, Pol. (1473-1543).
- CORBETT, James J.** (boxer); b. San Francisco, Calif. (1866-1933).
- CORNEILLE, Pierre** (dramatist); b. Rouen, Fr. (1606-1684).
- COROT, Jean Baptiste Camille** (painter); b. Paris, Fr. (1796-1875).
- CORREGGIO, Antonio Allegri da** (painter); b. Correggio, It. (1494-1534).
- CORTÉS (or CORTEZ), Hernando** (explorer); b. Medellin, Sp. (1485-1547).
- COWL, Jane** (Jane Cowles) (actress); b. Boston, Mass. (1884-1950).
- COWPER, William** (poet); b. Great Benhamstead, Herts., Eng. (1731-1800).
- COX, James M.** (publisher); b. Jacksonburg, Ohio (1870-1957).
- CRANE, Stephen** (novelist & poet); b. Newark, N. J. (1871-1900).
- CROCE, Benedetto** (philosopher); b. Pescasseroli, Aquila, It. (1866-1952).
- CROCKETT, Davy** (David) (frontiersman); b. Greene Co., Tenn. (1786-1836).
- CURIE, Marie** (Marja Skłodowska) (physicist-chemist); b. Warsaw, Pol. (1867-1934).
- CURIE, Pierre** (chemist); b. Paris, Fr. (1877-1906).
- CUSTER, George Armstrong** (army officer); b. New Rumley, Ohio (1839-1876).
- DAMROSCH, Walter Johannes** (orchestrator); b. Breslau, Ger. (1862-1950).
- DANA, Charles Anderson** (editor); b. Hingham, Mass. (1819-1897).
- D'ANNUNZIO, Gabriele** (soldier & author); b. Francaville al Mare, Pescara, It. (1878-1938).
- DANTE (or DURANTE) ALIGHIERI** (poet); b. Florence (1265-1321).
- DANTON, Georges Jacques** (French Revolutionary leader); b. Arcis-sur-Aube, (1759-1794).
- DARROW, Clarence Seward** (lawyer); b. Kinsman, Ohio (1857-1938).
- DARWIN, Charles Robert** (naturalist); b. Shrewsbury, Shrops., Eng. (1809-1882).
- DAUMIER, Honoré** (caricaturist); b. Mantes-la-Jolie, Fr. (1808-1879).
- DAVID** (King of Israel & Judah) (c.973 B.C.).

- DAVIDSON, Jo** (sculptor); b. New York City (1883-1952).
- DAVIS, Jefferson** (Pres. of Confederacy); b. Christian (now Todd) Co., Ky. (1808-1889).
- DEAN, James** (actor); b. Marion, Ind. (1931-1955).
- DEBS, Eugene Victor** (Socialist leader); b. Terre Haute, Ind. (1855-1926).
- DEBUSSY, Claude Achille** (composer); b. St. Germain-en-Laye, Fr. (1862-1918).
- DEFOE, Daniel** (novelist); b. London, Eng. (1659?-1731).
- DEGAS, Hilaire Germain Edgar** (painter); b. Paris, Fr. (1834-1917).
- DEMOSTHENES** (orator); b. Athens (385?-322 B.C.).
- DESCARTES, René** (philosopher & mathematician); b. La Haye, Fr. (1596-1650).
- DE SOTO, Hernando** (explorer); b. Barcarota, Sp. (1500?-1542).
- DE VOTO, Bernard** (author); b. Ogden, Utah (1897-1955).
- DEWEY, George** (naval officer); b. Montpelier, Vt. (1837-1917).
- DEWEY, John** (philosopher & educator); b. Burlington, Vt. (1859-1952).
- DICKENS, Charles John Huffam** (novelist); b. Portsea, Eng. (1812-1870).
- DICKINSON, Emily Elizabeth** (poet); b. Amherst, Mass. (1830-1886).
- DIogenES** (philosopher); b. Sinope, Asia Minor (412?-323 B.C.).
- DISRAELI, Benjamin** (statesman); b. London, Eng. (1804-1881).
- ODGSON, C. L.** See Carroll, Lewis.
- DONNE, John** (poet); b. London, Eng. (1573-1631).
- DORSEY, Jimmy** (band leader); b. Shenandoah, Pa. (1904-1957).
- DORSEY, Tommy** (band leader); b. Mahanoy Plane, Pa. (1905-1956).
- DOSTOEVSKI, Fyodor Mikhailovich** (novelist); b. Moscow, Rus. (1821-1881).
- DOUGLAS, Stephen Arnold** (politician); b. Brandon, Vt. (1813-1861).
- DOYLE, Sir Arthur Conan** (novelist & spiritualist); b. Edinburgh, Scot. (1859-1930).
- DRAKE, Sir Francis** (navigator); b. Tavistock, Devons., Eng. (1545?-1596).
- DRAPER, Ruth** (actress); b. New York City (1884-1956).
- DREISER, Theodore** (novelist); b. Terre Haute, Ind. (1871-1945).
- DRESSLER, Marie** (Leila Koerber) (actress); b. Cobourg, Ont., Can. (1869-1934).
- DREYFUS, Alfred** (French army officer); b. Alsace (1859-1935).
- DRYDEN, John** (poet); b. Northamptonshire, Eng. (1631-1700).
- DUMAS, Alexandre** (called Dumas père) (novelist); b. Villers-Cotterets, Fr. (1802-1870).
- DUMAS, Alexandre** (called Dumas fils) (novelist); b. Paris, Fr. (1824-1895).
- DU MAURIER, George Louis Palmella Busson** (novelist); b. Paris, Fr. (1834-1896).
- DUNCAN, Isadora** (dancer); b. San Francisco, Calif. (1878-1927).
- EUSE, Eleonora** (actress); b. Chioggia, It. (1859-1924).
- VOŘÁK, Antonín** (composer); b. Mühlhausen, Bohemia (1841-1904).
- EARHART, Amelia** (aviator); b. Atchison, Kans. (1898-1937).
- EDDY, Mary Morse** (nee Baker) (religious leader); b. Bow, N. H. (1821-1910).
- EDISON, Thomas Alva** (inventor); b. Milan, Ohio (1847-1931).
- EDMAN, Irwin** (philosopher); b. New York City (1896-1954).
- ENRHLICH, Paul** (bacteriologist); Silesia prov., Prus. (1854-1915).
- EINSTEIN, Albert** (physicist); b. Ulm, Ger. (1879-1955).
- ELGAR, Sir Edward** (composer); b. Worcester, Eng. (1857-1934).
- ELIOT, George** (Mary Ann Evans) (novelist); b. Warwickshire, Eng. (1819-1880).
- EMERSON, Ralph Waldo** (philosopher & poet); b. Boston, Mass. (1803-1882).
- ENESCO, Georges** (composer); b. Dorohoi, Rum. (1881-1955).
- ENGELS, Friedrich** (Socialist writer); b. Barmen, Ger. (1820-1895).
- EPICURUS** (philosopher); b. Samos (341-270 B.C.).
- ERASMUS, Desiderius** (Gerhard Gerhards) (scholar); b. Rotterdam (1466?-1536).
- ERICSON, Leif** (navigator) (c.10th cent. A.D.).
- EUCLID** (mathematician) (c.300 B.C.).
- EURIPIDES** (dramatist); b. Salamis (c. 484-407 B.C.).
- FAIRBANKS, Douglas** (actor); b. Denver, Colo. (1883-1939).
- FALLA, Manuel de** (composer); b. Cadiz, Sp. (1876-1946).
- FARADAY, Michael** (physicist); b. Newington, Sur., Eng. (1791-1867).
- FERMI, Enrico** (physicist); b. Rome, It. (1901-1954).
- FIELD, Eugene** (poet); b. St. Louis, Mo. (1850-1895).
- FIELD, Marshall, III** (publisher & philanthropist); b. Chicago, Ill. (1893-1956).
- FIELDING, Henry** (novelist); b. nr. Glastonbury, Som., Eng. (1707-1754).
- FIELDS, W. C.** (Claude William Dukenfield) (actor); b. Philadelphia, Pennsylvania (1880-1946).
- FISKE, Minnie Maddern** (nee Davey) (actress); b. New Orleans, La. (1865-1932).
- FITZGERALD, Francis Scott Key** (novelist); b. St. Paul, Minn. (1896-1940).
- FITZSIMMONS, Robert Prometheus** (boxer); b. Cornwall, Eng. (1862-1917).
- FLAUBERT, Gustave** (novelist); b. Rouen, Fr. (1821-1880).
- FLEMING, Sir Alexander** (bacteriologist); b. Lochfield, Scot. (1881-1955).
- FORD, Henry** (industrialist); b. Greenfield, Mich. (1863-1947).
- FOSTER, Stephen Collins** (composer); b. nr. Pittsburgh, Pa. (1826-1864).
- FRANCE, Anatole** (Jacques Anatole François Thibault) (author); b. Paris (1844-1924).
- FRANKLIN, Benjamin** (statesman & scientist); b. Boston, Mass. (1706-1790).
- FRAZER, Sir James George** (anthropologist); b. Glasgow, Scot. (1854-1941).
- FREUD, Sigmund** (psychoanalyst); b. Freiberg, Moravia (1856-1939).
- FULTON, Robert** (inventor); b. Lancaster Co., Pa. (1765-1815).

- GAINSBOROUGH**, Thomas (painter); b. Sudbury, Suff., Eng. (1727-1788).
- GALILEI**, Galileo (astronomer & physicist); b. Pisa, It. (1564-1642).
- GALSWORTHY**, John (novelist & dramatist); b. Coombe, Sur., Eng. (1867-1933).
- GANDHI**, Mohandas Karamchand (called Mahatma Gandhi) (Hindu leader); b. Porbandar, India (1869-1948).
- GARIBALDI**, Giuseppe (Italian nationalist leader); b. Nice, Fr. (1807-1882).
- GARRICK**, David (actor); b. Hereford, Heref., Eng. (1717-1779).
- GARRISON**, William Lloyd (abolitionist); b. Newburyport, Mass. (1805-1879).
- GAUGUIN**, Eugène Henri Paul (painter); b. Paris, Fr. (1848-1903).
- GAUTAMA BUDDHA** (Prince Siddhartha) (philosopher); b. Kapilavastu, India (563?-483 B.C.).
- GEHRIG**, Lou (Henry Louis Gehrig) (baseball player); b. New York City (1903-1941).
- GENGHIS KHAN** (Temujin) (conqueror); b. nr. Lake Baikal in Asia (1162-1227).
- GEORGE**, Henry (economist); b. Philadelphia, Pa. (1839-1897).
- GERONIMO** (Goyathlay) (Apache chieftain); b. Arizona (1829-1909).
- GERSHWIN**, George (composer); b. Brooklyn, N. Y. (1898-1937).
- GIBBON**, Edward (historian); b. Putney, Eng. (1737-1794).
- GIBSON**, Charles Dana (illustrator); b. Roxbury, Mass. (1867-1944).
- GIDE**, André (author); b. Paris, Fr. (1869-1951).
- GILBERT**, Sir William Schwenck (dramatist & librettist); b. London, England (1836-1911).
- GIOTTO di Bondone** (painter); b. Vespignano, It. (1276?-1337).
- GLADSTONE**, William Ewart (statesman); b. Liverpool, Eng. (1809-1898).
- GLUCK**, Christoph Willibald (composer); b. Erasbach, Bavaria (1714-1787).
- GOEBBELS**, Joseph Paul (Nazi leader); b. Rheydt, Ger. (1897-1945).
- GOERING**, Hermann (Nazi leader); b. Rosenheim, Bavaria (1893-1946).
- GOETHALS**, George Washington (engineer); b. Brooklyn, N. Y. (1858-1928).
- GOETHE**, Johann Wolfgang von (poet); b. Frankfurt am Main, Ger. (1749-1832).
- GOGH**, Vincent van (painter); b. Groot-Zundert, Brabant, Hol. (1853-1890).
- GOGOL**, Nikolai Vasilievich (novelist); b. nr. Mirgorod, Poltava, Ukr. (1809-1852).
- GOLDSMITH**, Oliver (dramatist & poet); b. County Longford, Ire. (1728-1774).
- GOMPERS**, Samuel (labor leader); b. London, Eng. (1850-1924).
- GOODYEAR**, Charles (inventor); b. New Haven, Conn. (1800-1860).
- GORKI**, Maxim (Alexei Maximovich Peshkov) (author); b. Nizhni Novgorod, Rus. (1868-1936).
- GOULD**, Jay (Jason) (financier); b. Roxbury, N. Y. (1836-1892).
- GOUNOD**, Charles François (composer); b. Paris, Fr. (1818-1893).
- GOYA Y LUCIENTES**, Francisco José de (painter); b. Fuendetodos, Sp. (1746-1828).
- GRAY**, Thomas (poet); b. London, Eng. (1716-1771).
- GRECO**, El (Domenicos Theotocopoulos) (painter); b. Candia, Crete (c.1542-1614).
- GREELEY**, Horace (journalist & politician); b. Amherst, N. H. (1811-1872).
- GRIEG**, Edvard Hagerup (composer); b. Bergen, Nor. (1843-1907).
- GRIFFITH**, David Lewelyn Wark (movie producer); b. La Grange, Ky. (1875-1948).
- GRIMM**, Jacob (mythologist); b. Hanau, Ger. (1785-1863).
- GRIMM**, Wilhelm (mythologist); b. Hanau, Ger. (1786-1859).
- GUITRY**, Sacha (Alexandre) (actor & movie director); b. St. Petersburg, Rus. (1885-1957).
- GUTENBERG**, Johann (printer); b. Mainz, Ger. (1400?-1468).
- HALE**, Nathan (American Revolutionary officer); b. Coventry, Conn. (1755-1776).
- HALS**, Frans (painter); b. Antwerp, Hol. (1580?-1666).
- HAMILTON**, Alexander (statesman); b. Leeward Is. (1757?-1804).
- HANCOCK**, John (statesman); b. Braintree, Mass. (1737-1793).
- HANDEL**, George Frederick (composer); b. Halle, Ger. (1685-1759).
- HANNIBAL** (Carthaginian general) (247-183 B.C.).
- HARDY**, Thomas (novelist); b. Dorsetshire, Eng. (1840-1928).
- HARLOW**, Jean (Harlean Carpenter) (actress); b. Kansas City, Mo. (1911-1937).
- HARTE**, Bret (Francis Brett Harte) (author); b. Albany, N. Y. (1836-1902).
- HARVEY**, William (physician); b. Folkestone, Kent, Eng. (1578-1657).
- HAWTHORNE**, Nathaniel (novelist); b. Salem, Mass. (1804-1864).
- HAY**, John Milton (statesman); b. Salem, Ind. (1838-1905).
- HAYDN**, Franz Joseph (composer); b. Rohrau, Aus. (1732-1809).
- HEARST**, William Randolph (publisher); b. San Francisco, Calif. (1863-1951).
- HEGEL**, Georg Wilhelm Friedrich (philosopher); b. Stuttgart, Ger. (1770-1831).
- HEINE**, Heinrich (Harry) (poet); b. Düsseldorf, Ger. (1797-1856).
- HENRY**, O. (William Sydney Porter) (story writer); b. Greensboro, N. C. (1862-1910).
- HENRY**, Patrick (statesman); b. Hanover Co., Va. (1736-1799).
- HEPPLEWHITE**, George (furniture designer); b. England (?-1786).
- HERBERT**, Victor (composer); b. Dublin, Ire. (1859-1924).
- HEROD** (Herodes) (called Herod the Great) (King of Judea) (73?-4 B.C.).
- HERODOTUS** (historian); b. Halicarnassus, Asia Minor (c.484-425 B.C.).
- HERRIOT**, Édouard (French statesman); b. Troyes, Fr. (1872-1957).
- HERSHOLT**, Jean (actor); b. Copenhagen, Den. (1886-1956).
- HINDENBURG**, Paul von (Paul Ludwig Hans Anton von Beneckendorff und von Hindenburg) (statesman); b. Posen, Prus. (1847-1934).

- HIPPOCRATES** (physician); b. Kos, Dodecanese (460?-237? B.C.).
- HITLER**, Adolf (Adolf Schicklgruber) (German dictator); b. Braunau, Aus. (1889-1945).
- HOFMANN**, Josef (pianist); b. Cracow, Pol. (1876-1957).
- HOGARTH**, William (painter & engraver); b. London, Eng. (1697-1764).
- HOLBEIN**, Hans (the Elder) (painter); b. Augsburg, Bavaria (1465?-1524).
- HOLBEIN**, Hans (the Younger) (painter); b. Augsburg, Bavaria (1497?-1543).
- HOLMES**, Oliver Wendell (author); b. Cambridge, Mass. (1809-1894).
- HOLMES**, Oliver Wendell (jurist); b. Boston, Mass. (1841-1935).
- HOMER** (Greek poet) (c.850 B.C.).
- HOMER**, Winslow (painter); b. Boston, Mass. (1836-1910).
- HONEGGER**, Arthur (composer); b. Le Havre, Fr. (1892-1955).
- HORACE** (Quintus Horatius Flaccus) (poet); b. Venosa, Lucania (65-8 A.C.).
- HOUDINI**, Harry (Erich Weiss) (magician); b. Appleton, Wis. (1874-1926).
- HOUSMAN**, Alfred Edward (poet); b. Fockburg, Worcs., Eng. (1859-1936).
- HOUSTON**, Samuel (political leader); b. Rockbridge Co., Va. (1793-1863).
- HOWARD**, Leslie (actor); b. London, Eng. (1893-1943).
- HOWE**, Elias (inventor); b. Spencer, Mass. (1819-1867).
- HOWELLS**, William Dean (author); b. Martin's Ferry, Ohio (1837-1920).
- HUDSON**, Henry (English navigator) (?-1611).
- HUGHES**, Charles Evans (jurist); b. Glens Falls, N. Y. (1862-1948).
- HUGO**, Victor Marie (author); b. Besançon, Fr. (1802-1885).
- HULL**, Josephine (actress); b. Newtonville, Mass. (1886-1957).
- HUME**, David (philosopher); b. Edinburgh, Scot. (1711-1776).
- HUSTON**, Walter (actor); b. Toronto, Ont., Can. (1884-1950).
- HUXLEY**, Thomas Henry (biologist); b. Ealing, Eng. (1825-1895).
- IBSEN**, Henrik (dramatist); b. Skien, Nor. (1828-1906).
- INNESS**, George (painter); b. nr. Newburgh, N. Y. (1825-1894).
- IRVING**, Washington (author); b. New York City (1783-1859).
- JACKSON**, Thomas Jonathan (general); b. Clarksburg, Va. (now West Virginia) (1824-1863).
- JAMES**, Henry (novelist); b. New York City (1843-1916).
- JAMES**, Jesse Woodson (outlaw); b. Clay Co., Mo. (1847-1882).
- JAMES**, William (psychologist); b. New York City (1842-1910).
- JANIS**, Elsie (Elsie Blerbower) (actress); b. Columbus, Ohio (1889-1956).
- JAY**, John (statesman & jurist); b. New York City (1745-1829).
- JEFFRIES**, James J. (boxer); b. Carroll, Ohio (1875-1953).
- JENNER**, Edward (physician); Berkeley, Glos., Eng. (1749-1823).
- JOAN OF ARC** (Jeanne d'Arc) (saint & patriot); b. Domremy-la-Pucelle, Fr. (1412-1431).
- JOHNSON**, Jack (John A.) (boxer); b. Galveston, Tex. (1876-1946).
- JOHNSON**, Samuel (lexicographer & author); b. Lichfield, Staffs., Eng. (1709-1784).
- JOLIOT-CURIE**, Irène (Irène Curie) (physicist); b. France (1897-1956).
- JOLLIET** (or JOLIET), Louis (explorer); b. Beauré, Can. (1645-1700).
- JOLSON**, Al (Asa Yoelson) (actor & singer); b. St. Petersburg, Rus. (1886-1950).
- JONES**, John Paul (John Paul) (naval officer); b. Scotland (1747-1792).
- JONSON**, Ben (Benjamin) (poet & dramatist); b. Westminster, England (1572-1637).
- JOYCE**, James (novelist); b. Dublin, Ire. (1882-1941).
- JOYCE**, Peggy Hopkins (nee Margaret Upton) (actress); b. Norfolk, Va. (1893?-1957).
- JUÁREZ**, Benito Pablo (statesman); b. Guadalupe, Oaxaca, Mex. (1806-1872).
- KANT**, Immanuel (philosopher); b. Königsberg, Prus. (1724-1804).
- KEATS**, John (poet); b. London, Eng. (1795-1821).
- KEMAL ATATÜRK** (Mustafa Kemal) (statesman); b. Salonika, Turk. (1881-1938).
- KEPLER**, Johannes (astronomer); b. Weil, Württemberg, Ger. (1571-1630).
- KERN**, Jerome David (composer); b. New York City (1885-1945).
- KEY**, Francis Scott (lawyer); b. Frederick (now Carroll) Co., Md. (1779-1843).
- KEYNES**, John Maynard (economist); b. Cambridge, Eng. (1883-1946).
- KIDD**, William (called Capt. Kidd) (pirate); b. Greenock, Scot. (1645?-1701).
- KILMER**, Alfred Joyce (poet); b. New Brunswick, N. J. (1886-1918).
- KIPLING**, Rudyard (author); b. Bombay, India (1865-1936).
- KNOX**, John (religious reformer); b. Hadlington, E. Lothian, Scot. (1505-1572).
- KOSCIUSKO**, Thaddeus (Tadeusz Andrzej Bonawentura Kościuszko) (military officer); b. province of Lithuania, Poland (1746-1817).
- KOUSSEVITZKY**, Serge (Sergei) Alexandrovitch (orchestra conductor); b. Russia (1874-1951).
- KUBLAI KHAN** (Mongol conqueror) (1216-1294).
- LAFAYETTE**, Marquis de (Marie Joseph Paul Yves Roch Gilbert du Motier) (military officer); b. Auvergne, Fr. (1757-1834).
- LA FOLLETTE**, Robert Marin (politician); b. Primrose, Wis. (1855-1925).
- LA GUARDIA**, Fiorello Henry (politician); b. New York City (1882-1947).
- LAMARCK**, Chevalier de (Jean Baptiste Pierre Antoine de Monet) (naturalist); b. Bazantin, Picardy (1744-1829).
- LAMB**, Charles (essayist); b. London, Eng. (1775-1834).

- LANDIS**, Kenesaw Mountain (jurist); b. Millville, Ohio (1866-1944).
- LANGTRY**, Lily (nee Emily Le Breton) (actress); b. island of Jersey (1852-1929).
- LAO-TZU** (or LAO-TSE) (Li Erh) (philosopher); b. Honan prov., China (c.604-531 B.C.).
- LARDNER**, Ring (Ringgold Wilmer Lardner) (story writer); b. Niles, Mich. (1885-1933).
- LA SALLE**, Sieur de (Robert Cavalier) (explorer); b. Rouen, Fr. (1634-1687).
- LAUDER**, Sir Harry (Harry MacLennan) (singer); b. Portobello, Scot. (1870-1950).
- LAVOISIER**, Antoine Laurent (chemist); b. Paris, Fr. (1743-1794).
- LAWRENCE**, David Herbert (novelist); b. Nottingham, Eng. (1885-1930).
- LAWRENCE**, Gertrude (Gertrud Klasen) (actress); b. London, Eng. (1900-1952).
- LAWRENCE OF ARABIA** (Thomas Edward Lawrence; later changed name to Shaw) (author & soldier); b. Portmadoc, Wales (1888-1935).
- LEAR**, Edward (nonsense poet); b. London, Eng. (1812-1888).
- LEE**, Robert Edward (Confederate general); b. Stratford Estate, Va. (1807-1870).
- LEHÁR**, Franz (composer); b. Komárom, Hung. (1870-1948).
- LENIN**, Nikolai (Vladimir Illich Ulyanov) (statesman); b. Simbirsk, Rus. (1870-1924).
- LEONARD**, Benny (Benjamin Leiner) (boxer); b. New York City (1896-1947).
- LEWIS**, Meriwether (explorer); b. Albemarle Co., Va. (1774-1809).
- LEWIS**, Sinclair (novelist); b. Sauk Centre, Minn. (1885-1951).
- LIND**, Jenny (Johanna Maria Lind) (soprano); b. Stockholm, Swed. (1820-1887).
- LISTER**, Joseph (surgeon); b. Upton, Essex, Eng. (1827-1912).
- LISZT**, Franz (composer & pianist); b. Raiding, Hung. (1811-1886).
- LIVINGSTONE**, David (missionary & explorer); b. Lanarkshire, Scot. (1813-1873).
- LLOYD GEORGE**, David (statesman); b. Manchester, Eng. (1863-1945).
- LOCKE**, John (philosopher); b. Somersetshire, Eng. (1632-1704).
- LODGE**, Henry Cabot (legislator); b. Boston, Mass. (1850-1924).
- LOMBARD**, Carole (Carol Jane Peters) (actress); b. Ft. Wayne, Ind. (1908-1942).
- LOMBROSO**, Cesare (criminologist); b. Verona, It. (1836-1909).
- LONDON**, Jack (novelist); b. San Francisco, Calif. (1876-1916).
- LONG**, Huey Pierce (politician); b. Winnfield, La. (1893-1935).
- LONGFELLOW**, Henry Wadsworth (poet); b. Portland, Maine (1807-1882).
- LOWELL**, Amy (poet); b. Brookline, Mass. (1874-1925).
- LOWELL**, James Russell (poet); b. Cambridge, Mass. (1819-1891).
- LOYOLA**, St. Ignatius of (Inigo de Onez y Loyola) (founder of Jesuits); b. Gúipuzcoa prov., Sp. (1491-1556).
- LUBITSCH**, Ernst (movie director); b. Berlin, Ger. (1892-1947).
- LUDENDORFF**, Erich Friedrich Wilhelm (general); b. Kruszevnia, Ger. (1865-1937).
- LUTHER**, Martin (religious reformer); b. Eisleben, Ger. (1483-1546).
- MacARTHUR**, Charles (dramatist); b. Scranton, Pa. (1895-1956).
- MACAULAY**, Thomas Babington (author); b. Leicestershire, Eng. (1800-1859).
- MacDONALD**, James Ramsay (statesman); b. Lossiemouth, Scot. (1866-1937).
- MACDOWELL**, Edward Alexander (composer); b. New York City (1861-1908).
- MACFADDEN**, Bernarr (physical culturist); b. nr. Mill Spring, Mo. (1868-1955).
- MACHIARELLI**, Niccolò (political philosopher); b. Florence (1469-1527).
- MACK**, Connie (Cornelius McGillicuddy) (baseball executive); b. East Brookfield, Mass. (1862-1956).
- MAETERLINCK**, Count Maurice (author); b. Ghent, Belg. (1862-1949).
- MAGELLAN**, Ferdinand (Fernando de Magalhães) (navigator); b. Sabrosa, Port. (1480?-1521).
- MAGSAYSAY**, Ramón (statesman); b. Iba, Luzon, Philippines (1907-1957).
- MAHAN**, Alfred Thayer (naval historian); b. West Point, N. Y. (1840-1914).
- MAHLER**, Gustav (composer & conductor); b. Kalischt, Bohemia (1860-1911).
- MANET**, Édouard (painter); b. Paris, Fr. (1832-1883).
- MANN**, Horace (educator); b. Franklin, Mass. (1796-1859).
- MANN**, Thomas (novelist); b. Lübeck, Ger. (1875-1955).
- MANSFIELD**, Katherine (story writer); b. Wellington, N. Z. (1888-1923).
- MARAT**, Jean Paul (French revolutionist); b. Boudry, Neuchâtel, Switzerland (1743-1793).
- MARCONI**, Guglielmo (inventor); b. Bologna, It. (1874-1937).
- MARCUS AURELIUS** (Marcus Annius Verus) (Roman emperor); b. Rome (121-180).
- MARIE ANTOINETTE** (Joséphine Jeanne Marie Antoinette) (Queen of France); b. Vienna, Aus. (1755-1793).
- MARKHAM**, Charles Edwin (poet); b. Oregon City, Ore. (1852-1940).
- MARLOWE**, Christopher (dramatist); b. Canterbury, Eng. (1564-1593).
- MARLOWE**, Julia (Sarah Frost) (actress); b. Cumberlandshire, Eng. (1866-1950).
- MARQUETTE**, Jacques (missionary & explorer); b. Laon, Fr. (1637-1675).
- MARSHALL**, John (jurist); b. nr. Germantown, Va. (1755-1835).
- MARX**, Karl (Socialist writer); b. Treves, Prus. (1818-1883).
- MARY STUART** (Queen of Scotland); b. Linlithgow, Scot. (1542-1587).
- MASARYK**, Thomas Garrigue (statesman); b. Hodonin, Moravia (1850-1837).
- MASSENET**, Jules Émile Frédéric (composer); b. Montaud, Fr. (1842-1912).
- MASTERS**, Edgar Lee (poet); b. Garnett, Kans. (1869-1950).
- MATISSE**, Henri (painter); b. Cateau, Fr. (1869-1954).
- MAUPASSANT**, Henri René Albert Guy de (story writer); b. Normandy, Fr. (1850-1893).

- MAXIMILIAN** (Ferdinand Maximilian Joseph) (Emperor of Mexico); b. Vienna, Aus. (1832-1867).
- MAXWELL**, James Clerk (physicist); b. Edinburgh, Scot. (1831-1879).
- MCCARTHY**, Joseph R. (U. S. Senator); b. Grand Chute, Wis. (1908-1957).
- MCCORMACK**, John (tenor); b. Athlone, Ire. (1884-1945).
- MCCORMICK**, Cyrus Hall (inventor); b. Rockbridge Co., Va. (1809-1884).
- McGRAW**, John J. (baseball manager); b. Truxton, N. Y. (1873-1934).
- MEDICI**, Lorenzo de' (called Lorenzo the Magnificent) (Florentine ruler); b. Florence (1449-1492).
- MELBA**, Nellie (Helen Porter Mitchell) (soprano); b. nr. Melbourne, Australia (1861-1931).
- MELLON**, Andrew William (financier); b. Pittsburgh, Pa. (1855-1937).
- MELVILLE**, Herman (novelist); b. New York City (1819-1891).
- MENCKEN**, Henry Louis (author); b. Baltimore, Md. (1880-1956).
- MENDEL**, Gregor Johann (botanist); b. Heinzendorf, Silesia (1822-1884).
- MENDELEYEV**, Dmitri Ivanovich (chemist); b. Tobolsk, Siberia (1834-1907).
- MENDELSSOHN-BARTHOLODY**, Jakob Ludwig Felix (composer); b. Hamburg, Ger. (1809-1847).
- MESMER**, Franz Anton (physician); b. Itz-mang, nr. Constance, Baden (1733-1815).
- METTERNICH**, Prince Klemens Wenzel Nepomuk Lothar von (statesman); b. Coblenz, Aus. (1773-1859).
- MICHELANGELO BUONARROTI** (painter & sculptor); b. Caprese, Tuscany, It. (1475-1564).
- MILL**, John Stuart (philosopher); b. London, Eng. (1806-1873).
- MILLAY**, Edna St. Vincent (poet); b. Rock-land, Maine (1892-1950).
- MILLER**, Glenn (band leader); b. Clarinda, Iowa (1909?-1944).
- MILNE**, Alan Alexander (author); b. London, Eng. (1882-1956).
- MILTON**, John (poet); b. London, Eng. (1608-1674).
- MINUIT**, Peter (Governor of New Amsterdam); b. Wesel, Rhenish Prussia (1580-1638).
- MITCHELL**, Margaret (novelist); b. Atlanta, Ga. (1900-1949).
- MOMHAMMED** (prophet); b. Mecca, Arabia (570-632).
- MOLIÈRE** (Jean Baptiste Poquelin) (dramatist); b. Paris, Fr. (1622-1673).
- MOLNAR**, Ferenc (dramatist); b. Budapest, Hung. (1878-1952).
- MONET**, Claude (painter); b. Paris, Fr. (1840-1926).
- MONTAIGNE**, Michel Eyquem de (essayist); b. nr. Bordeaux, Fr. (1533-1592).
- MONTEZUMA II** (Aztec emperor); b. Mexico (1480?-1520).
- MOORE**, Thomas (poet); b. Dublin, Ire. (1779-1852).
- MORE**, Sir Thomas (statesman & author); b. London, Eng. (1478-1535).
- MORGAN**, Helen (singer); b. Danville, Ohio (1900?-1941).
- MORGAN**, John Pierpont (financier); b. Hartford, Conn. (1837-1913).
- MORLEY**, Christopher (novelist); b. Haverford, Pa. (1890-1957).
- MORSE**, Samuel Finley Breese (painter & inventor); b. Charlestown, Mass. (1791-1872).
- MOUSSORGSKY**, Modest Petrovich (composer); b. Karev, Rus. (1839-1881).
- MOZART**, Wolfgang Amadeus (Johannes Chrysostomus Wolfgangus Theophilus Mozart) (composer); b. Salzburg, Aus. (1756-1791).
- MURILLO**, Bartolomé Esteban (painter); b. Seville, Sp. (1617-1682).
- MUSSOLINI**, Benito (Italian dictator); b. Dovia, Forlì, It. (1883-1945).
- NAPOLEON BONAPARTE** (Emperor of the French); b. Ajaccio, Corsica (1769-1821).
- NAST**, Thomas (cartoonist); b. Landau, Ger. (1840-1902).
- NATION**, Carry Amelia (temperance leader); b. Garrard Co., Ky. (1846-1911).
- NELSON**, Viscount Horatio (naval officer); b. Burnham Thorpe, Norf., Eng. (1758-1805).
- NERO** (Nero Claudius Caesar Drusus Germanicus) (Roman emperor); b. Antium, Latium, It. (A.D. 37-68).
- NEWTON**, Sir Isaac (mathematician & scientist); b. nr. Grantham, Lincs., Eng. (1642-1727).
- NIETZSCHE**, Friedrich Wilhelm (philosopher); b. nr. Lützen, Saxony (1844-1900).
- NIGHTINGALE**, Florence (nurse); b. Florence, It. (1820-1910).
- NIJINSKY**, Waslaw (dancer); b. Warsaw, Pol. (1890-1950).
- NOBEL**, Alfred Bernhard (industrialist); b. Stockholm, Swed. (1833-1896).
- NOSTRADAMUS** (Michel de Notredame) (astrologer); b. St. Remi, Fr. (1503-1566).
- OCHS**, Adolph Simon (publisher); b. Cincinnati, Ohio (1858-1935).
- OFFENBACH**, Jacques (composer); b. Cologne, Ger. (1819-1880).
- OMAR KHAYYAM** (poet & astronomer); b. Nishapur, Khurasan, Persia (died c. 1123).
- O'NEILL**, Eugene Gladstone (dramatist); b. New York City (1888-1953).
- OROZCO**, José Clemente (painter); b. Zapotlán, Jalisco, Mex. (1883-1949).
- OSLER**, Sir William (physician); b. Bond-head, Ont., Can. (1849-1919).
- OVID** (Publius Ovidius Naso) (poet); b. Sulmona, It. (43 B.C.-?A.D. 17).
- PADEREWSKI**, Ignace Jan (pianist & statesman); b. Podolia prov., Pol. (1860-1941).
- PAGANINI**, Niccolò (violinist); b. Genoa, It. (1782-1840).
- PAINE**, Thomas (political philosopher); b. Thetford, Eng. (1737-1809).
- PARNELL**, Charles Stewart (Irish nationalist leader); b. Avondale, Wicklow, Ire. (1846-1891).
- PASCAL**, Blaise (philosopher); b. Clermont, Fr. (1623-1662).
- PASTEUR**, Louis (chemist); b. Dole, Jura, Fr. (1822-1895).

- PAVLOV, Ivan Petrovich** (physiologist); b. Ryazan dist., Rus. (1849-1936).
- PAVLOVA, Anna** (ballerina); b. St. Petersburg, Rus. (1885-1931).
- PEARY, Robert Edwin** (explorer); b. Crescon, Pa. (1856-1920).
- PENN, William** (American colonist); b. London, Eng. (1644-1718).
- PEPYS, Samuel** (diarist); b. Bampton, Eng. (1633-1703).
- PERICLES** (statesman); b. Athens (died 429 B.C.).
- PERÓN, María Eva Duarte de** (political leader); b. Los Toldos, Arg. (1919-1952).
- PERSHING, John Joseph** (general); b. Linn Co., Mo. (1860-1948).
- PETRARCH** (Francesco Petrarca) (poet); b. Arezzo, It. (1304-1374).
- PINZA, Ezio** (basso); b. Rome, It. (1892-1957).
- PIRANDELLO, Luigi** (dramatist & novelist); b. nr. Girgenti, Sicily (1867-1936).
- PITT, William** ("Younger Pitt") (statesman); b. nr. Bromley, Eng. (1759-1806).
- PIZARRO, Francisco** (explorer); b. Trujillo, Sp. (1470?-1541).
- PLATO** (Aristocles) (philosopher); b. Athens (?) (427?-347 B.C.).
- PLUTARCH** (biographer); b. Chaeronea, Boeotia (A.D. 46?-120).
- POCAHONTAS** (Mataoka) (American Indian princess); b. Virginia (?) (1595?-1617).
- POE, Edgar Allan** (poet & story writer); b. Boston, Mass. (1809-1849).
- POLO, Marco** (traveler); b. Venice (1254?-1324).
- POMPEY** (Gnaeus Pompeius Magnus) (general); b. Rome (?) (106-48 B.C.).
- PONCE DE LEÓN, Juan** (explorer); b. Servas, Sp. (1460?-1521).
- POPE, Alexander** (poet); b. London, Eng. (1688-1744).
- POST, Wiley** (aviator); b. Texas (1900-1935).
- PRIESTLEY, Joseph** (chemist); b. nr. Leeds, Eng. (1733-1804).
- PROKOFIEFF, Sergei Sergeevich** (composer); b. St. Petersburg, Rus. (1891-1953).
- PROUST, Marcel** (novelist); b. Paris, Fr. (1871-1922).
- PTOLEMY** (Claudius Ptolemaeus) (astronomer & geographer); b. Ptolemais Hermil (2nd century A.D.).
- PUCCINI, Giacomo** (composer); b. Lucca, It. (1858-1924).
- PULITZER, Joseph** (publisher); b. Makó, Hung. (1847-1911).
- PUSHKIN, Alexander Sergeevich** (poet & dramatist); b. Moscow, Rus. (1799-1837).
- PYLE, Ernest Taylor** (journalist); b. Dana, Ind. (1900-1945).
- PYTHAGORAS** (mathematician & philosopher); b. Samos (6th century B.C.).
- RABELAIS, François** (satirist); b. nr. Chinon, Fr. (1494?-1553).
- RACHMANINOFF, Sergei Wassilievitch** (pianist & composer); b. Oneg Estate, Novgorod, Rus. (1873-1943).
- RACINE, Jean Baptiste** (dramatist); b. La Ferté-Milon, Fr. (1639-1699).
- RALEIGH, Sir Walter** (courtier & navigator); b. London, Eng. (1552?-1618).
- RAPHAEL** (Raffaello Santi) (painter); b. Urbino, It. (1483-1520).
- RASPUTIN, Grigori Efimovich** (monk); b. Tobolsk prov., Siberia (1871?-1916).
- RAVEL, Maurice Joseph** (composer); b. Clouville, Fr. (1875-1937).
- REED, Walter** (army surgeon); b. Belroi, Va. (1851-1902).
- REINHARDT, Max** (Max Goldmann) (theater producer); b. nr. Vienna, Aus. (1873-1943).
- REMBRANDT** (Harmensz van Rijn Rembrandt) (painter); b. Leyden, Hol. (1606-1669).
- RENOIR, Pierre Auguste** (painter); b. Limoges, Fr. (1841-1919).
- RESPIGI, Ottorino** (composer); b. Bologna, It. (1879-1936).
- REVERE, Paul** (silversmith); b. Boston, Mass. (1735-1818).
- REYNOLDS, Sir Joshua** (painter); b. nr. Plymouth, Eng. (1723-1792).
- RHODES, Cecil John** (South African statesman); b. Bishop Stortford, Herts., Eng. (1853-1902).
- RICE, Grantland** (sports writer); b. Murfreesboro, Tenn. (1880-1954).
- RICHELIEU, Duc de** (Armand Jean du Plessis) (cardinal); b. Paris (1585-1642).
- RILEY, James Whitcomb** (poet); b. Greenfield, Ind. (1849-1916).
- RIMSKI-KORSAKOV, Nikolai Andreievich** (composer); b. Tikhvin, Rus. (1844-1908).
- ROBESPIERRE, Maximilien François Marie Isidore de** (French Revolutionist); b. Arras, Fr. (1758-1794).
- ROBINSON, Bill** (Luther) (dancer); b. Richmond, Va. (1878-1949).
- ROBINSON, Edwin** (Arlington) (poet); b. Head Tide, Maine (1869-1935).
- ROCKEFELLER, John** (capitalist); b. Richford, N. Y. (1839-1937).
- ROCKNE, Knute Kenneth** (football coach); b. Voss, Nor. (1888-1931).
- RODIN, François Auguste René** (sculptor); b. Paris, Fr. (1840-1917).
- ROENTGEN, Wilhelm Konrad** (physicist); b. Lennep, Prus. (1845-1923).
- ROGERS, Will** (William Penn Adair Rogers) (humorist); b. Oologah, Okla. (1879-1935).
- ROLLAND, Romain** (author); b. Clamecy, Fr. (1866-1944).
- ROMBERG, Sigmund** (composer); b. Hungary (1887-1951).
- ROSSETTI, Dante Gabriel** (painter & poet); b. London, Eng. (1828-1882).
- ROSSINI, Gioacchino Antonio** (composer); b. Pesaro, It. (1792-1868).
- ROSTAND, Edmond** (dramatist); b. Marseilles, Fr. (1868-1918).
- ROUSSEAU, Jean Jacques** (philosopher); b. Geneva, Switz. (1712-1778).
- RUBENS, Peter Paul** (painter); b. Siegen, Westphalia (1577-1640).
- RUNYON, Alfred Damon** (journalist); b. Manhattan, Kans. (1884-1946).
- RUSKIN, John** (art critic); b. London, Eng. (1819-1900).
- RUSSELL, Lillian** (Helen Louise Leonard) (soprano); b. Clinton, Iowa (1861-1922).
- RUTH, Babe** (George Herman Ruth) (baseball player); b. Baltimore, Md. (1895-1948).

- SAINT-GAUDENS**, Augustus (sculptor); b. Dublin, Ire. (1848-1907).
- SAINT-SAËNS**, Charles Camille (composer); b. Paris, Fr. (1835-1921).
- SAND**, George (Amandine Lucille Aurore Du-devant, nee Dupin) (novelist); b. Paris, Fr. (1804-1876).
- SANTAYANA**, George (philosopher); b. Madrid, Sp. (1863-1952).
- SAPPHO** (poet); b. Lesbos (lived c.600 B.C.).
- SARGENT**, John Singer (painter); b. Florence, It., of American parents (1856-1925).
- SARTO**, Andrea del (Andrea Domenico d'Ag-nolo di Francesco) (painter); b. Florence (1486-1531).
- SAUL** (King of Israel) (11th century B.C.).
- SCHILLER**, Johann Christoph (dramatist); b. Marbach, Wurttemberg, Ger. (1759-1805).
- SCHONBERG**, Arnold (composer); Vienna, Aus. (1874-1951).
- SCHOPENHAUER**, Arthur (philosopher); b. Danzig (1788-1860).
- SCHUBERT**, Franz Peter (composer); b. Vi-enna, Aus. (1797-1826).
- SCHUMANN**, Robert Alexander (composer); b. Zwickau, Saxony, Ger. (1810-1856).
- SCHUMANN-HEINK**, Ernestine (nee Roessler) (contralto); b. nr. Prague, Boh. (1861-1936).
- SCHURZ**, Carl (U. S. army officer & journal-ist); b. nr. Cologne, Ger. (1829-1906).
- SCOTT**, Robert Falcon (explorer); b. Deven-port, Eng. (1868-1912).
- SCOTT**, Sir Walter (novelist); b. Edinburgh, Scot. (1771-1832).
- SHAKESPEARE**, William (dramatist); b. Stratford on Avon, Eng. (1564-1616).
- SHAW**, George Bernard (dramatist); b. Dub-lin, Ire. (1856-1950).
- SHELLEY**, Percy Bysshe (poet); b. nr. Hor-sham, Sus., Eng. (1792-1822).
- SHERATON**, Thomas (furniture designer); Stockton-on-Tees, Eng. (1751-1806).
- SHERIDAN**, Richard Brinsley (dramatist); b. Dublin, Ire. (1751-1816).
- SHERMAN**, William Tecumseh (army officer); b. Lancaster, Ohio (1820-1891).
- SHERWOOD**, Robert Emmet (dramatist); b. New Rochelle, N. Y. (1896-1955).
- SIBELIUS**, Jean (composer), b. Tavastehus, Fin. (1865-1957).
- SKINNER**, Otis (actor); b. Cambridge, Mass. (1858-1942).
- SLOAN**, John (painter); b. Lock Haven, Pa. (1871-1951).
- SMITH**, Adam (economist); b. Kirkcaldy, Fifes., Scot. (1723-1790).
- SMITH**, Alfred Emanuel (politician); b. New York City (1873-1944).
- SMITH**, John (American colonist); b. Wil-loughby, Lincs., Eng. (1580-1631).
- SMITH**, Joseph (religious leader); b. Sharon, Vt. (1805-1844).
- SOCRATES** (philosopher); b. Athens (469-399 B.C.).
- SOLOMON** (King of Israel); b. Jerusalem (?) (died c.933 B.C.).
- SOLO** (lawgiver); b. Salamis, Gr. (638?-2559 B.C.).
- SOPHOCLES** (dramatist); b. nr. Athens (496?-406 B.C.).
- SOTHERN**, Edward Hugh (actor); b. New Orleans, La. (1859-1933).
- SOUSA**, John Philip (composer); b. Wash-ington, D. C. (1854-1932).
- SPENCER**, Herbert (philosopher); b. Derby, Eng. (1820-1903).
- SPENGLER**, Oswald (philosopher); b. Blank-enburg, Ger. (1880-1936).
- SPENSER**, Edmund (poet); b. London, Eng. (1552?-1599).
- SPINOZA**, Baruch (philosopher); b. Amster-dam, Hol. (1632-1677).
- STALIN**, Joseph Vissarionovich (Iosif V. Dzhugashvili) (statesman); b. nr. Tiflis, Georgia, Rus. (1879-1953).
- STANISLAVSKI** (Konstantin Sergeevich Alek-seev) (stage producer); b. Moscow, Rus. (1863-1938).
- STANLEY**, Sir Henry Morton (John Row-lands) (explorer); b. Denbigh, Wales (1841-1904).
- STEIN**, Gertrude (author); b. Allegheny, Pa. (1874-1946).
- STEINMETZ**, Charles Proteus (engineer); b. Breslau, Ger. (1865-1923).
- STENDHAL** (Marie Henri Beyle) (novelist); b. Grenoble, Fr. (1783-1842).
- STERNE**, Laurence (novelist); b. Clonmel, Ire. (1713-1768).
- STEVENSON**, Robert Louis Balfour (novelist & poet); b. Edinburgh, Scot. (1850-1894).
- STONE**, Lucy (woman suffragist); b. nr. West Brookfield, Mass. (1818-1893).
- STOWE**, Harriet Elizabeth (nee Beecher) (novelist); b. Litchfield, Connecticut (1811-1896).
- STRADIVARI**, Antonio (violinmaker); b. Cre-mona, It. (1644-1737).
- STRAUS**, Oskar (composer); b. Vienna, Aus. (1870-1954).
- STRAUSS**, Johann (composer); b. Vienna, Aus. (1825-1899).
- STRAUSS**, Richard (composer); b. Munich, Ger. (1864-1949).
- STUART**, Gilbert Charles (painter); b. Rhode Island (1755-1828).
- STUYVESANT**, Peter (Governor of New Am-sterdam); b. W. Friesland, Neth. (1592-1672).
- SULLIVAN**, Sir Arthur Seymour (composer); b. London, Eng. (1842-1900).
- SULLIVAN**, Francis L. (actor); b. London, Eng. (1903-1956).
- SULLIVAN**, John Lawrence (boxer); b. Bos-ton, Mass. (1858-1918).
- SUN YAT-SEN** (statesman); b. nr. Macao, China (1866-1925).
- SWIFT**, Jonathan (satirist); b. Dublin, Ire. (1667-1745).
- SWINBURNE**, Algernon Charles (poet); b. London, Eng. (1837-1909).
- SYNGE**, John Millington (dramatist); b. nr. Dublin, Ire. (1871-1909).
- TAFT**, Robert Alphonso (legislator); b. Cin-cinnati, Ohio (1889-1953).
- TAGORE**, Sir Rabindranath (poet); b. Cal-cutta, India (1861-1941).
- TALLEYRAND-PÉRIGORD**, Charles Maurice de (statesman); b. Paris, Fr. (1754-1838).
- TAMERLANE** (Timur) (Mongol conqueror); b. nr. Samarkand, Sib. (1336?-1405).

- TARKINGTON**, Newton Booth (novelist); b. Indianapolis, Ind. (1869-1946).
- TCHAIKOVSKY** (or **TSCHAIKOWSKY**), Peter (Pëtr) Il'ich (composer); b. Ural region, Rus. (1840-1893).
- TECUMSEH** (Shawnee Indian chief); b. nr. Springfield, Ohio (1768?-1813).
- TENNYSON**, Alfred (1st Baron Tennyson) (poet); b. Somersby, Lincs., Eng. (1809-1892).
- TERRY**, Ellen Alicia (actress); b. Coventry, Eng. (1848-1928).
- TETRAZZINI**, Luisa (soprano); b. Florence, It. (1871-1940).
- THACKERAY**, William Makepeace (novelist); b. Calcutta, India (1811-1863).
- THOMAS**, Dylan Marlais (poet); b. Caermarthenshire, Wales (1914-1953).
- THOREAU**, Henry David (naturalist & author); b. Concord, Mass. (1817-1862).
- THORPE**, Jim (James Francis Thorpe) (athlete); b. nr. Prague, Oklahoma (1888-1953).
- TILDEN**, William Tatem, II (tennis player); b. Philadelphia, Pa. (1893-1953).
- TINTORETTO**, Il (Jacopo Robusti) (painter); b. Venice (1518-1594).
- TITIAN** (Tiziano Vecelli) (painter); b. Preve di Cadere, Venezia, It. (1477-1576).
- TOLSTOI**, Count Leo (Lev) Nikolaevich (novelist); b. Tula prov., Rus. (1828-1910).
- TOSCANINI**, Arturo (orchestra conductor); b. Parma, It. (1867-1957).
- TOULOUSE-LAUTREC** (Henri Marie Raymond de Toulouse-Lautrec Monfa) (painter); b. Albi, Fr. (1864-1901).
- TROTSKY**, Leon (Lev Davidovich Bronstein) (statesman); b. Elisavetgrad, Rus. (1879-1940).
- TURGENEV**, Ivan Sergeevich (novelist); b. Orel, Rus. (1818-1883).
- TWAIN**, Mark (Samuel Langhorne Clemens) (author); b. Florida, Mo. (1835-1910).
- TWEED**, William Marcy (politician); b. New York City (1823-1878).
- VALENTINO**, Rudolph (Rodolpho d'Antongualla) (actor); b. Castellana, It. (1895-1926).
- VANDENBERG**, Arthur Hendrick (legislator); b. Grand Rapids, Mich. (1884-1951).
- VANDERBILT**, Cornelius (financier); b. Port Richmond, N. Y. (1794-1877).
- VANDYKE** (or **VAN DYCK**), Sir Anthony (painter); b. Antwerp, Hol. (1599-1641).
- VAN GOGH**, See Gogh.
- VELÁZQUEZ**, Diego Rodríguez de Silva y (painter); b. Seville, Sp. (1599-1660).
- VERDI**, Giuseppe (composer); b. Roncole, Parma, It. (1813-1901).
- VERMEER**, Jan (or Jan van der Meer van Delft) (painter); b. Delft, Hol. (1632-1675).
- VERNE**, Jules (author); b. Nantes, Fr. (1828-1905).
- VILLA**, Pancho (or Francisco) (Doroteo Arango) (bandit); b. Rio Grande, Mex. (1877-1923).
- VILLON**, François (François de Montcorbier) (poet); b. Paris, Fr. (1431-c.1463).
- VINCI**, Leonardo da (painter & scientist); b. Vinci, Tuscany, It. (1452-1519).
- VIRGIL** (or **VERGIL**) (Publius Vergilius Maro) (poet); b. Mantua, Gaul (70-19 B.C.).
- VOLTAIRE** (François Marie Arouet) (author); b. Paris, Fr. (1694-1778).
- VON STROHEIM**, Erich (actor); b. Vienna, Aus. (1885-1957).
- WAGNER**, Honus (John Peter Wagner) (baseball player); b. Mansfield, Pennsylvania (1874-1955).
- WAGNER**, Wilhelm Richard (composer); b. Leipzig, Ger. (1813-1883).
- WALTON**, Izaak (author); b. Stafford, Eng. (1593-1683).
- WARD**, Fannie (actress); b. St. Louis, Mo. (1872-1952).
- WASHINGTON**, Booker T. (educator); b. Franklin Co., Va. (1856-1915).
- WATSON**, Thomas John (industrialist); b. Campbell, N. Y. (1874-1956).
- WATT**, James (inventor); b. Greenock, Scot. (1736-1819).
- WAYNE**, Anthony (military officer); b. Waynesboro, Pa. (1745-1796).
- WEBER**, Karl Maria Friedrich Ernst von (composer); b. nr. Lübeck, Ger. (1786-1826).
- WEBSTER**, Daniel (statesman); b. Salisbury, N. H. (1782-1852).
- WEBSTER**, Noah (lexicographer); b. West Hartford, Conn. (1758-1843).
- WEILL**, Kurt (composer); b. Dessau, Ger. (1900-1950).
- WEIZMANN**, Chaim (Israeli statesman); b. Grodno prov., Rus. (1874-1952).
- WELLINGTON**, Duke of (Arthur Wellesley) (statesman); b. Ireland (1769-1852).
- WELLS**, Herbert George (author); b. Bromley, Kent, Eng. (1866-1946).
- WESLEY**, John (religious leader); b. Epworth Rectory, Lincolnshire, Eng. (1703-1791).
- WESTINGHOUSE**, George (inventor); b. Central Bridge, N. Y. (1846-1914).
- WHARTON**, Edith Newbold (nee Jones) (novelist); b. New York City (1862-1937).
- WHISTLER**, James Abbott McNeill (painter); b. Lowell, Mass. (1834-1903).
- WHITE**, William Allen (journalist); b. Emporia, Kans. (1868-1944).
- WHITMAN**, Walt (Walter) (poet); b. West Hills, N. Y. (1819-1892).
- WHITNEY**, Eli (inventor); b. Westboro, Mass. (1765-1825).
- WHITTIER**, John Greenleaf (poet); b. Haverhill, Mass. (1807-1892).
- WILDE**, Oscar (Oscar Fingal O'Flahertie Wills) (author); b. Dublin, Ire. (1854-1900).
- WILLIAMS**, Roger (clergyman); b. London, Eng. (1603?-1683).
- WILLKIE**, Wendell Lewis (lawyer); b. Elwood, Ind. (1892-1944).
- WINTHROP**, John (1st Gov., Mass. Bay Colony); b. Suffolk, Eng. (1588-1649).
- WISE**, Stephen Samuel (rabbi); b. Budapest, Hung. (1874-1949).
- WOLFE**, Thomas Clayton (novelist); b. Asheville, N. C. (1900-1938).
- WOLSEY**, Thomas (prelate & statesman); b. Ipswich, Eng. (1475?-1530).
- WOOD**, Grant (painter); b. Anamosa, Iowa (1892-1942).
- WOOLF**, Adeline Virginia (nee Stephens) (novelist); b. London, Eng. (1882-1941).

WOOLLCOTT, Alexander (author); b. Phalanx, N. J. (1887-1943).
 WORDSWORTH, William (poet); b. Cockermouth, Cumb., Eng. (1770-1850).
 WRIGHT, Orville (inventor); b. Dayton, Ohio (1871-1948).
 WRIGHT, Wilbur (inventor); b. Millville, Ind. (1867-1912).
 YEATS, William Butler (poet); b. nr. Dublin, Ire. (1865-1939).
 YOUNG, Brigham (religious leader); b. Whitingham, Vt. (1801-1877).

YOUNG, Cy (Denton True Young) (baseball player); b. Gilmore, Ohio (1867-1955).

ZAHARIAS, Mildred (Babe) Didrikson (athlete); b. Port Arthur, Tex. (1912-1956).
 ZIEGFELD, Florenz (theatrical producer); b. Chicago, Ill. (1869-1932).

ZOLA, Émile (novelist); b. Paris, Fr. (1840-1902).

ZOROASTER (or ZARATHUSTRA) (religious leader); b. Persia (lived about the 6th century B.C.).

American Academy of Arts and Letters

(633 W. 155th St., New York 32, N. Y.)

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CONTRACT BRIDGE

By B. JAY BECKER

Top Record-Holder in Masters' Individual Championship Play

Contract bridge was invented by Harold S. Vanderbilt in 1925. The new game was a great improvement over the parent game, auction bridge, which in turn had been derived from whist, a card game of two centuries standing.

Contract bridge developed rapidly but did not catch fire with the public until the late Ely Culbertson, a promotion genius of the first order, staged a simulated grudge match against Sidney Lenz in 1931. Newspapers everywhere carried daily stories on the hectic match refereed by Lieutenant (now General) Alfred M. Gruenther.

Various systems of bidding sprang up during the first years of contract bridge but after five or six years of experimentation the best features of each were joined to form what is essentially the system in use today. Among the leading contributors to the evolution of present day methods were Vanderbilt, Culbertson, Lenz, Work, Whitehead, Reith, Goren, Blackwood, Roth, Stayman.

Today, bridge is regarded as almost a social necessity. Hundreds of textbooks have been written and many newspapers carry daily bridge columns. It is estimated there are 25 million bridge players in the United States. Sectional, national and international tournaments are conducted by the American Contract Bridge League, governing body of bridge.

EVALUATION

For many years, the chief method of determining the value of a hand was by means of a scale called honor tricks. Culbertson was chief proponent of this method. High cards are, for example, valued as follows:

A = 1 H. T.	K-x = $\frac{1}{2}$ H. T.
K-Q = 1 H. T.	Q-J-x = $\frac{1}{2}$ H. T.
A-K = 2 H. T.	Q or J = plus value
A-Q = $\frac{1}{2}$ H. T.	

During the past ten years the honor trick method has been largely supplanted by the point count method. Point count was devised by Milton Work back in the auction days, but was not generally accepted until Charles H. Goren took a prominent part in bringing it to the attention of the public. The experts had played point count for years, but to the lesser players it was relatively unknown. The introduction of point count has done a great deal to raise the level of bidding skill for the average player.

Point count evaluation divides into two categories: high card points and distributional points. With balanced hands—hands without a void or singleton—the high card point count is both practical and accurate and reflects essentially the true value of a hand.

HIGH CARD POINTS

Ace = 4 points	Queen = 2 points
King = 3 points	Jack = 1 point
Total points in deck	= 40
Points in each suit	= 10
Points in average hand	= 10
Points required for game	= 26
Points required for small slam	= 33
Points required for grand slam	= 37

Opening notrump bids are characterized by distribution which is usually 4-3-3-3, 4-4-3-2, or in some cases 5-3-3-2 and strength or stoppers in all four suits. The required point count is:

Opening 1 N. T. = 16 to 18 points
Opening 2 N. T. = 22 to 24 points
Opening 3 N. T. = 25 to 27 points

With 19, 20 or 21 points, bid one of a suit and jump in notrump over partner's response. Responses to an opening one notrump bid, with a balanced hand:

Raise 1 N. T. to 2 N. T. with 8 or 9 points
Raise 1 N. T. to 3 N. T. with 10 to 14 points
Raise 1 N. T. to 6 N. T. with 17 to 20 points
Raise 1 N. T. to 7 N. T. with 21 points or more

DISTRIBUTIONAL POINT COUNT

Two methods of evaluating distributional points are in general use. According to the Goren method 3 points are taken for each void, 2 points for each singleton and 1 point for each doubleton. These are added to the high card point count to determine the value of the hand.

According to the Karpin method 1 point is taken for each card in a suit above four. These points are then added to the high card points to determine the value of the hand.

As new information is obtained during the bidding, the original distributional point count evaluation may rise or fall. Distributional point count should not be rigidly followed. It is a flexible yardstick.

OPENING SUIT BIDS

The opening bid of one in a suit ranges usually from 12 to 21 points. All hands containing 14 high card points are compulsory opening bids. Distributional factors are important in evaluating a hand. Distribution is a key factor in every deal.

In choosing the suit with which to open the bidding, the longest suit is usually bid first. When two suits are of equal length the higher ranking suit is generally bid first. When there are three biddable four-card suits the suit that is chosen is the one directly beneath the singleton in rank.

RESPONSES TO SUIT BIDS

Any new suit named by the responding hand compels the opening bidder to bid

again. With 6 points or more the partner of the opening bidder of one in a suit must make a response. He may name a new suit, respond in notrump or raise the opening bidder's suit.

The single raise of the opening bidder's suit denotes adequate trump support and 6 to 9 points which include distributional values. The response of one notrump denotes a balanced hand without adequate trump support with 6 to 9 points in high cards. The response of one of a new suit denotes 6 to 16 points. The response of two in a new suit denotes 10 to 16 points.

The jump raise of the opening bidder's suit, for example 1 spade—3 spades, denotes at least four trumps and 13 to 15 points. The response of 2 notrump to the opening bid of one in a suit denies adequate trump support and represents a balanced hand with 13 to 15 points in high cards, plus stoppers in the remaining three suits. The response of 3 notrump indicates 16 to 18 points and a balanced hand with stoppers in the other three suits.

BIDDABLE SUITS

Any five card suit is biddable. Any four card suit which includes four high card points is biddable.

REBIDS BY OPENING BIDDER

Having opened with one of a suit the opening bidder may identify a minimum type of hand by rebidding one notrump or by repeating his previous suit in minimum terms. A rebid by the opening bidder, where he goes one level higher than necessary, represents a strong hand containing at least 17 points.

OPENING BID OF TWO IN A SUIT

This bid is forcing to game. It represents a hand which for practical purposes can make a game by itself. The best method in use to determine whether a hand ranks as a two bid is to count the losers, and if the hand then contains enough winners to insure a game the hand qualifies as a two bid. The response to a two bid is 2 notrump unless the responder has more than 6 points in which case he either raises his partner, bids his own suit or jumps in notrump.

OVERCALLS

The bid over an adverse opening bid, when made in the one level, usually ranges in high cards between 7 and 13 points and includes a good suit. The overcall in the two level is made with a strong suit and usually has about 12 or 13 points in high cards. In making overcalls, the number of winning tricks which are probable is more important than the point count. The overcaller should not be subject to a penalty in excess of 500 points in the event he should be doubled. The informatory double over an adverse opening bid represents at least an opening bid of its own.

BLACKWOOD SLAM CONVENTION

After the partners have agreed definitely or inferentially upon a suit as trump the bid of 4 notrump by either of them is an artificial bid requesting partner to name the number of Aces he has. The responses are as follows:

- No Aces — 5 Clubs
- 1 Ace — 5 Diamonds
- 2 Aces — 5 Hearts
- 3 Aces — 5 Spades
- 4 Aces — 5 Notrump

When the response is followed by a 5 notrump bid it should be construed as a request for the number of Kings. The responses are as follows:

- No Kings — 6 Clubs
- 1 King — 6 Diamonds
- 2 Kings — 6 Hearts
- 3 Kings — 6 Spades
- 4 Kings — 6 Notrump

STAYMAN NOTRUMP CONVENTION

The response of 2 Clubs to partner's opening one notrump bid is an artificial bid requesting the opener to bid a four card major suit. If the opening bidder has no four card major he replies by bidding 2 diamonds with a minimum one notrump bid, or 2 notrump with a maximum notrump bid.

IN GENERAL

Bridge is a partnership game. In bidding, each player tries to represent to his partner the strength or weakness of his hand. Exact bidding will produce exact results. Weak hands are bid weakly; strong hands are bid strongly. Forcing bids must be respected. Partners' bids should be trusted more than the opponents' bids.

High card point count in balanced hands is very accurate. Distributional point count is sometimes treacherous and common sense should be employed where the distributional point count does not appear to give an accurate evaluation of the true value of the hand.

In counting defensive tricks against a suit contract, honor tricks provide a more reliable gauge than point count.

Remember that the important thing in bridge is the number of tricks that are taken, not the number of points a side has. Remember also that all the rules in bridge are made to be broken at the appropriate time. There is no such word as "never" when it comes to stating a general principle. You can be dealt 635,013,559,600 different hands in bridge. No general rules can be expected to cover all possibilities. Imagination and ingenuity are important qualities to be exercised.

Large penalties should be avoided. A game should not be bid unless there is nearly an even chance of making it; a small slam should not be bid unless there is an even chance at least to make it; a grand slam should not be bid unless there is at least a 2 to 1 probability of making it. Play probabilities, and not hunches. Bridge is a scientific game.

PARLIAMENTARY PROCEDURE

by

Dan Golenpaul

Parliamentary procedures are rules for the conduct of a meeting in an orderly and democratic manner. Their purpose is to ensure the rule by a majority and to protect the rights of all members of an organization or assembly in meetings and in connection with all activities of the organization. The application of parliamentary rules is solely for this purpose.

Very often, though, individuals employ the rules for a contest of wits. This practice can be interesting and the life of the meeting, but it can also be a nuisance and a field day for parliamentary pests. The degree to which this activity may be tolerated should be dictated by circumstances. A certain amount of indulgence may be necessary because it is part of the game and is inevitably an expression of many egos that meet in a group.

Under no circumstances, however, should a chairman or members permit anyone to use the rules of procedure to trick and confuse members or to impede the function of a meeting. To prevent these occurrences, a knowledge of parliamentary rules is important. We will do our best in the limited space permitted to impart a little learning. (But remember, a little learning is a dangerous thing.) What we are setting forth here should be adequate to take care of most situations in organizations made up of friendly people who want to conduct their business in an orderly, friendly manner.

If it is necessary for you to be a member of a group that is involved in bitter conflicts, then we advise that you go to more technical and authoritative works on parliamentary procedure such as *Robert's Rules of Order*, *Cushing's Manual*, *Sturgis' Standard Code of Parliamentary Procedure* and others. We also suggest that you go to the meetings with a good lawyer and a baseball bat.

HOW TO FORM AN ORGANIZATION

People form or join organizations because they have a common interest or purpose that can best be advanced and attained through group activity. Whether the character of the organization be social, political, educational, communal, fraternal or athletic, its purpose and government are usually expressed in by-laws. They are not required to be elaborate, technical or legal.

BY-LAWS

By-laws should simply state the objects of the organization, the rights and duties of members, the qualifications of members, the number required to constitute a quorum, the dues, the necessary governing officers and how they should be elected, their terms of office, when meetings should be held and where, the order of business and, in the case of large and impersonal organizations, an authority for settling parliamentary disputes. (An organization usually adopts as its guide such works as mentioned heretofore.)

FIRST MEETING

At the first meeting of a group, temporary officers are chosen: a chairman, a secretary and a committee to prepare a draft of by-laws. The meeting is called to order by the member of the group who has assumed the leadership in the formation of the organization. He or she opens the meeting by the simple statement: "I now call the meeting to order," and asks the members to make nominations for chairman. When this announcement is made, members may ask for the floor by raising their hands, and, when recognized, offer a name in nomination. The person presiding can be nominated as can any other member present. Nominations require no seconding. A majority vote is necessary for the election of the chairman. The same procedure is required for the secretary and committee on by-laws.

The officers selected at the first meeting may serve until the next meeting or for a limited period, to be decided by a majority vote of the members present.

SECOND MEETING

At the second meeting, the report of the committee on by-laws is presented to the membership. The entire report may be accepted by a motion to adopt the report. A two-thirds vote is required. If the entire report is not acceptable to the membership, each provision may be considered separately; consideration consists of debating, amending, accepting or rejecting. The vote required on each provision is two-thirds of the membership present instead of the usual majority. Because by-laws are the fundamental basis of the organization, they should be acceptable to as many members as possible.

By-laws can be amended at any time during the life of the organization. Any proposals for changes in the by-laws require prior notice in writing to the entire membership before acting upon the proposed amendments at any meeting.

ELECTION OF OFFICERS

With the adoption of the by-laws providing for the type of officers for the organization, and the length of their terms, the organization proceeds to elect such officers. The usual officers for most groups are a president, vice-president, recording secretary, corresponding secretary, treasurer, sergeant at arms, and committees. Some have an executive secretary, a paid job, but an organization would have to be large to warrant a paid official.

All members are eligible for office when an organization is first formed. But later the by-laws may require a certain minimum period of membership as a qualification to hold office. Nominations are made by the simple statement: "I nominate so-and-so." The nominations do not require a second and a majority vote is necessary for election.

DUTIES OF OFFICERS

President: The president, as in government, is top man in an organization. Some organizations call this official "chairman." President sounds better, and is more appropriate when he performs not only the functions of presiding at meetings, but other duties in directing the organization. Chairman is the proper designation for one elected only to preside at a meeting.

Their duties as presiding officers are identical, regardless of title; they call the meeting to order, then present the order of business which the meeting is to act upon. They recognize members who desire the floor for a proposal or a discussion. They are supposed to see that everyone who wishes to speak has the opportunity, and to do as little talking themselves as possible. The presiding officer has the right to take part in a discussion. When he does, the vice-chairman should take the chair until the presiding officer has concluded his talk.

A chairman is really a moderator who directs, controls and regulates proceedings. He is neither a boss nor an antagonist and is not to be regarded as such by the members. It is the chairman's primary job to keep the meetings moving smoothly. He should prevent members from abusing their privileges without interference, but should not curb their rights. The chair must entertain all motions that are seconded and must restate them for the members. He must call for a vote on motions and declare the motion adopted or defeated on the basis of the vote. He should allow for a re-count or a roll call whenever requested to do so. When referring to himself, the presiding officer usually says: "The chair recognizes Mr. Blank" instead of "I recognize Mr. Blank."

The president or permanent chairman is usually an ex-officio member of all committees. Although he is not obligated to attend all meetings, he may if he so desires.

Secretary: The duties of a secretary are to keep the records of the organization, to record the minutes of the meetings, to handle the correspondence (unless the organization is large enough to require a corresponding secretary), such as notifying members of regular meetings or of a special meeting, reading the minutes at the meeting, etc.

The minutes of a secretary should indicate when the meeting was held, where it took place, who presided, what business was transacted, when the meeting adjourned, etc.

Treasurer: The treasurer's duties are to handle the funds of the organization, to collect the dues, to pay the bills when

authorized, to keep the books for the organization with records of income and expenditures, and to render reports on finances at the regular meetings.

Sergeant-at-Arms: The duties of the sergeant-at-arms are to assist the chairman in preserving order among the people present at a meeting, members and visitors, to act as a sort of usher by checking people at the door to see that only those entitled to be present at the meeting are admitted, and to escort anyone out if requested to do so by the chairman.

COMMITTEES

The purpose of committees is to expedite the transaction of business on matters that require more time than the meeting permits, or on matters that require time for investigation and special study. Committees are essential in a large organization, but are really not necessary for a small group that can handle its limited business at the regular membership meetings.

The types of committee may vary according to the needs of an organization. A "standing" committee has a fixed term of office and gives continuous service. A "special" committee serves temporarily to investigate and report on some special project or condition.

The top committee in most organizations is the executive committee, sometimes made up of the chairmen of the various committees, sometimes selected from the general membership. Other committees are: membership committees, athletic committees, education committees, social or house committees, committees on finance, temporary committees to deal with a temporary specific problem, etc.

Committees may be appointed by the presiding officer, or be elected by the group, depending upon the by-laws. We think it best for committees to be elected by the membership. The chairman of the committee is either designated by the presiding officer, elected by the committee, or is the person obtaining the most votes in the election. Committees should consist of an odd number of members to assure a majority vote and a minimum of stalemates. As far as possible, the by-laws governing

the conduct of a meeting or organization govern the committees as well.

Most committees are usually made up of small groups and, therefore, their meetings are less formal than regular organization meetings. Motions do not require seconding, speeches are not as restricted and limited, and the chairman attending the committee, or the president of the organization, if attending the committee meeting, participates in the discussions on a par with the other members.

Providing for numerous officers is a good thing because it distributes responsibility among more members. This is important to keep in mind in connection with committees; while good people should be placed on many committees, it is best and advisable to have as many members on committees as possible.

The committee chairman reports for the committee to the general membership meeting. Reports of the committee may consist only of information requiring no action or may contain recommendations for certain action which is often the equivalent of a proposed motion.

When there is a difference of opinion among committee members, the majority report offered is considered the committee report. The dissenting members have the right, however, to submit a minority report proposing a different course of action. Both reports must be heard or read at the same meeting. No action on the majority report is in order until the minority report is disposed of. It can be disposed of in either of two ways. (a) Any member may object to consideration of the minority report and such objection must be voted on immediately without debate. If carried, the minority report is dropped. (b) If the objection to consideration is not upheld, then a motion to substitute the minority report for the majority report is in order. If this motion is carried, the majority report is eliminated and the minority report becomes the committee report and is the only report before the body. If the motion to substitute is not carried, then the meeting proceeds to deal with the majority report.

It is well to bear in mind that any report or motion belongs to the membership.

If they are not satisfied with either report, they can dissolve the committee and act directly from the floor or appoint a new committee.

The chairman of the committee calls the meetings of the committee. If he fails or refuses to do so, or if he is absent, any two members of the committee may call a meeting. The chairman of a committee usually acts as its secretary.

If a committee fails to render a report on a matter referred to it within a reasonable time, the membership may force it to do so by drawing up a petition bearing the number of signatures required in the by-laws. This is called discharging a committee.

ORDER OF BUSINESS

The chairman calls the meeting to order. He must determine whether a quorum is present. The number of members required to constitute a quorum is stipulated in the by-laws, usually one more than half of the membership, or as low as one-tenth of the membership. Without a quorum, business cannot be legally conducted. The secretary reads the minutes of the previous meeting and they are adopted, perhaps with corrections, or, as read. Officers and committees make any reports they have. Old business left over from the previous meeting is transacted. New business is brought up, discussed and acted upon. At the close, the chairman says that he will entertain a motion for adjournment.

RULES OF DEBATE

The presiding officers should first recognize the mover of a proposal, or the member of a committee presenting a report, and should try to alternate recognition between those favoring and those opposing a proposition. Any member is entitled to speak on the main question and on each amendment as presented. He must confine himself to the question under consideration, must avoid personalities, and must not accuse others of ill motives. In some groups the by-laws limit each speaker to a fixed number of minutes. The meeting may vote to extend the time of a speaker if it so desires. Debate can only be halted by a motion for the previous question and a two-thirds vote is required.

VOTING RULES

There are several methods of taking a vote. The simplest is by voice—"ayes" and "noes." This may be challenged by any member who thinks that the chairman did not hear correctly, in which case the vote is taken by a show of hands, or by standing. Roll call votes, recorded by the secretary, are required in some instances. The closed ballot (written votes) also is commonly used, especially in the election of officers. Only attending members may vote, unless the by-laws specifically permit proxy voting. A tie vote defeats a motion. The chairman is allowed to break a tie, though, if he has not previously voted. Some organizations permit a chairman to vote only in case of a tie, while others allow him to vote as a regular member.

A majority vote is generally required to pass ordinary motions or to adopt ordinary actions. There are certain motions which require a two-thirds vote of those present. These generally include the following: amendments to the by-laws, to take up a question out of its proper order, to suspend the rules, to support an objection to the consideration of a question, to take up the previous question, to limit debate, to expel a member or officer, to discharge a committee, or to refer back to a committee. No vote can be made unanimous if even one member present objects.

WHAT HAPPENS TO A MOTION

A motion is a proposal for action by an organization. It is made by any member who asks the chair for the floor and is properly recognized. Most motions require a second before being placed before the group. Not more than one main motion may be considered at a time. The procedure is simple. One merely says, "I move the following." The chairman then asks if anyone seconds the motion. If it is properly seconded, the chairman announces that a motion has been made and seconded, calls for a discussion and repeats the motion on request. A motion may be voted on without discussion, but discussion is required if requested by any member.

A motion causes many things to happen. It provokes debate, suggests modifications,

clarifies the thinking and expresses the will of the group on a question. Once a motion is presented to the membership, it belongs to them to treat and dispose of in any one of several ways and can only be withdrawn with the consent of the membership.

A motion may be amended. This means that the motion may be modified or qualified by adding, substituting, or eliminating words or whole paragraphs. These changes must be relevant to the main motion.

For example, a motion is made for the organization to publish a magazine and stipulates (a) the publication to be a monthly, (b) to have two editors, (c) to cost the members \$1.00 a year, etc. This motion may be amended as follows: (a) to substitute "weekly" for "monthly," (b) to provide salaries for the two editors, (c) to eliminate the dollar charge for the magazine. All these amendments are in order because while the original motion has been amplified or qualified by the amendments, the proposal for publishing a magazine still prevails.

Amendments that are irrelevant are not permissible, such as an amendment requiring the editors to watch television. This is improper (perhaps for other reasons) because it is extraneous to the main question of proposing the publication of a magazine.

Amendments that negate the purpose of the motion, such as a proposal that the organization should not publish a magazine, are out of order because if the membership is entirely opposed to the idea, it can vote against the main motion or dismiss it in other parliamentary ways.

Other important rules governing amendments are:

1. There is no limit to the number of amendments that may be offered, but each amendment must be disposed of before a new one may be proposed.

2. After all amendments have been acted on, the meeting votes on the main motion, and all of the adopted amendments are incorporated in the main motion.

3. All amendments require a majority vote for passage.

4. A rejected amendment may not be re-submitted in identical form and no amend-

ment may be offered reversing an amendment previously adopted.

This is not all that can happen to a motion. In addition to amendments to the motion, you are also permitted to make amendments to the amendments. For example, the original motion stipulates that the magazine should have two editors. An amendment provides that the editors be paid salaries. This amendment can be amended to provide what the salary should be.

Now, if you are thinking of whether you can amend the amendment to the amendment, the answer is "No." Although this has really gone far enough, there is something else you are allowed to do, for better or worse, and that is to introduce a substitute for the motion itself or for any of the amendments or for everything that has been proposed on the question. The substitute for an amendment does not modify the amendment, but replaces it and is subject to the same rules that apply to amendments.

When amendments pile up to the point of confusing the membership, resorting to a substitute for the entire proposition may be helpful. The best way to do this, under the circumstances, is for someone to move to have a special committee designated to prepare a substitute motion for the whole.

If the motion is adopted, the committee-elect should withdraw from the meeting to try to reconcile any contradictions contained in the motion or the amendments. It should bring forth a clear substitute that expresses the intentions of most of the proposals.

Let us not lose sight of the fact that the purpose of a motion is not to create an endless chain of acts, but to get something done. In this connection, it is well to bear in mind that the motion and amendments do not necessarily conflict and that the proposer of a motion may accept the amendments without discussion or vote.

Motions that cannot be amended: These include such motions as questions of order or appeal, objections to consideration of the question, or motions to adjourn, to call for the order of the day, to vote, to withdraw a motion, to take up a question out

of proper order, to suspend the rules, to table, to take from the table, to reconsider, to consider the previous question, to postpone indefinitely, to amend an amendment, or to nominate. Motions to postpone indefinitely, to limit debate, or to recess can be amended as to time only.

DELAYING OR CANCELING CONSIDERATION OF A MOTION

It is not binding on a meeting to deal with a motion at the time it is proposed. On the contrary, the membership has the choice of postponing or renewing consideration of a motion. Here are some of the ways to attain such objectives.

Objection to consideration: Consideration of any issue may be stopped before discussion begins on the question, even though it involves interrupting the speaker, by objecting to its consideration. This objection may be made by any member and does not require a second. Objection to consideration calls for an immediate vote without debate or amendment and requires a two-thirds vote. If carried, the motion is dropped for all time. The purpose of the act is to prevent the meeting from dealing with a question that may be offensive. This reason should be primary. Other reasons may be because it might waste the time of the meeting or it may be inappropriate to deal with the question at the time. This action is very drastic and should not be employed to gag any member except the village idiot at his worst.

Motion to postpone indefinitely: This is a polite way of killing a motion, at least for the moment. It differs from "Objection to consideration" insofar as the motion to postpone indefinitely and the motion itself are debatable and cannot be made while a member has the floor. This motion requires a second and calls for a majority vote. It cannot be amended and cannot be brought up again.

Motion to "lay on the table": If the meeting does not want to consider the motion at all, the procedure is to make a motion to "lay the question on the table." This suspends consideration of the main motion and amendments until such time

as the group chooses to take it up again, which can be later at the same meeting after other business has been transacted or at any subsequent meeting. This motion must be seconded, requires a majority vote, may not be debated or amended or postponed. The only way to bring the motion back is to move to "take it off the table."

Motion to postpone to a definite date: This is an expression of the will of the meeting to put off consideration of the proposal until later in the same session or until a subsequent meeting. The object of such an act is to delay consideration of the question until more members are present, or to enable members to acquire further information before making their decisions. This motion is debatable only as to the advisability of postponement. The subject matter of the motion is not debatable. It is open for amendment as to time only and requires a majority vote.

Motion to refer to a committee: This is usually done if a meeting feels that a question requires more time and information before it acts upon it. A motion to refer to a committee names an existing committee or creates a special committee for its consideration and may be accompanied by instructions. Seconding and a majority vote are required for passage of this motion. It can be debated only as to the desirability and advisability of referring it to the committee. It can be amended only as to the nature of the committee and as to the instructions.

HOW TO REOPEN A QUESTION

To avoid finality of decisions that may be harmful to the best interests of the members, certain actions previously taken by the members are subject to review by them. Such review may apply to matters acted upon, matters postponed, or matters delegated to committees.

Motion to reconsider: This deals with something acted upon by a meeting which the members would like to reconsider at another time during the same meeting. It is a motion that should be made by one who has voted with the majority, whether in the affirmative or the negative, and is

made because the voter has changed his mind on the matter in the light of new information. Very often a member deliberately votes for or against motions so that he can move for reconsideration of the subject later in the meeting when there may be a better chance for passing or defeating the motion because more members are present or because he will have an opportunity to persuade other members to change their votes. This is both good parliamentary procedure and democratic.

A motion to reconsider requires a second, a majority vote, is debatable and cannot be renewed. If a motion to reconsider is carried, the question is before the assembly with its original parliamentary status. Motions that cannot be reconsidered include: motions to take from the table, to lay on the table, or a motion for indefinite postponement that has been defeated.

To take from the table: This motion allows a group to take up a subject that was set aside by a motion to table it at a previous meeting. This resumption of consideration on a question rates priority over any new motions and can be introduced when there is no other business before the body. Motion to take a question from the table requires a second and a majority vote, is not debatable and cannot be amended.

A motion to rescind: This motion enables the membership to re-evaluate some action taken in the past because it may have been adopted without full understanding of the consequences at that time. The point of rescinding a previous act of an organization does not apply to any legally binding act committing the organization, nor to the election of members or officers. This motion calls for a second and majority vote unless the original motion involved required a two-thirds vote. It is debatable and cannot be amended.

Several important techniques for keeping informed about proceedings, preventing violations and protecting the rights of members, correcting errors, and expediting the business at hand, are:

Moving the Previous Question: This asks that the discussion be stopped at once on any motion before the body. A move for the previous question cannot interrupt the speaker. It requires a second, is not de-

batable, cannot be amended, and requires a two-thirds vote. Its purpose is to say "Let's stop talking and vote."

Point of Information: This is a method of obtaining information about what is occurring through the medium of the chairman or the speaker. This interruption request is permissible even when one is speaking. It is unusual for the speaker or the chair to ignore such a request. Since it is intended only to secure information, it is not proper to use this as a device to make a statement or delay proceedings.

Point of Order: This questions the correctness of any action at the time it occurs. The only time that a point of order can be employed *after* an action has taken place, is if it involves a violation of by-laws, constitution, or the law. It is raised on the basis of a mistake or omission in procedure, of a violation of the rules of the organization, of decorum in debate, or of irrelevancy of debate and procedure. A point of order needs no seconding, cannot be amended and requires no vote.

A point of order may be raised by any member at any time. It is in the nature of a demand addressed to the chair, which is required to act immediately on the point of order raised. The procedure is as follows: A member announces, "I rise to a point of order." This automatically halts any discussion or action until the chairman rules on the point of order. If the chairman concurs, he announces that the point of order was well taken, and proceeds to correct whatever is in question.

Appeal: If any other member takes exception to this ruling, he may appeal from the decision of the chair. Another basis for an appeal may result when the chair declares the point of order not well taken. This appeal is usually made by the person raising the point of order. All appeals require a second, are debatable and are subject to a majority vote of the membership. If they vote for the appeal, the chairman's decision is reversed. If they vote against the appeal, the chairman's decision is upheld. In the event of a tie vote, the chairman is sustained. If the chairman is a member of the organization, he has the right to vote and may make the tie.

Discussions on some appeals are not customary, such as questions of indecorum, violation of rules of speaking, or order of business.

Sometimes the chairman is in doubt on a point of order. When he is, he may defer to someone present for advice, or ask the members to discuss and vote on the point of order. This is the only time that a point of order is debatable. Their vote determines the chairman's decision.

Motion to adjourn: This motion is in order at any time, but should be employed with discretion. Obviously, it should not interfere with the organization's efforts to get business done. This motion requires a second, is not debatable, cannot be amended, and must be voted on immediately. A majority vote is necessary. Any motion for adjournment that refers to a specific time or place for the next meeting is subject to debate and amendment.

We have tried to project the reader into actual participation in the forming of an organization and the conduct of a meeting, and we have given more attention to the processes than to the discussion of technical rules. In following this course, we may have omitted some matters that do not occur at every meeting, but that do happen occasionally and should be understood.

Removal of officers: This is sometimes an unhappy necessity. Misconduct of an officer may involve neglect of duties, abuse of privileges or incompetence. The removal of an officer is accomplished by preferring charges which should be of a serious nature and supported by proof. The charges may be considered at a general meeting or referred to a committee to investigate and to recommend a course of action. A two-thirds vote of the members present is required to remove an officer. A motion to remove an officer is debatable.

Expulsion of members: If a member violates his obligations and duties or is involved in an act that may bring disrepute to the organization, he is subject to charges and a hearing before a committee or the membership and can be expelled by a two-thirds vote. This action is debatable. Obviously, such actions should not be undertaken unless the charges are serious and

supported by substantial proof. It would be deplorable if the exercise of such a drastic action were based on a frivolous issue or personal bias. Sometimes the behavior of a member at a meeting requires disciplinary action in the form of a motion for immediate expulsion. This is not debatable and requires a two-thirds vote.

Question of privilege: A member may interrupt a meeting at any time to raise a question involving the comfort or convenience of the membership. It may concern such matters as the physical condition of the meeting hall, the seating of the members, the conduct of persons present, or the ability to hear speakers. This request requires no second, is not debatable, cannot be amended and is decided by the chair.

Suspension of the rules: The object of a proposal to suspend the rules is to permit a meeting to do something that is ordinarily prohibited by the rules of parliamentary procedure or by the adopted order of business. The suspension of rules is generally employed to deal with an emergency or special condition, such as permitting a guest speaker to start earlier than scheduled or allowing for the interruption of the regular order of business by a visiting committee. There are other circumstances under which the suspension of rules is permitted, but these cases are too complicated to be treated here. This motion cannot interrupt a speaker, requires a second, cannot be debated or amended, and requires a two-thirds vote.

We have endeavored to outline some of the basic rules for the benefit of the many people who want some simple knowledge of how to form an organization, how to conduct a meeting, or how to participate in one; also to help spectators at a convention understand what is going on. Beyond this, we refer you to the authorities on parliamentary procedure.

However important rules are for guidance in most human activities, there is no doubt that much is accomplished through informal discussion and action, and we do not hesitate to urge small friendly groups to do their business with as little formality and as few restrictions as possible. If this does not always work, we hope our book is there to serve you.

CROSSWORD PUZZLE GUIDE



Since most persons who can read and write occasionally or frequently indulge in the indoor pastime of working crossword puzzles, this section is offered as a handy help to solvers who may be stumped for a two-letter word meaning "three-toed sloth" or a three-letter word meaning "native of Mindanao."

We have those two words here, and plenty more. We have the Greek, Roman, Norse and Egyptian deities of myth and legend. And we have those "Greek letters" and "months of the Jewish year" so often needed to fill out little gaps.

The reader is warned that in mythology there are many confusing and even conflicting accounts of the identities and adventures of the various gods, goddesses and lesser figures. There is also considerable variation in the spelling of names, places and things. For instance, you may spell it ICON, IKON or EIKON, and similar options are plentiful all along the crossword line. If the reader will keep further possible variations in mind, it may help at a critical point.

Various other sections of our book will be found of use to the crossword puzzler—especially the section of world geography and statistics which begins on page 727.

First Aid to Crossword Puzzlers

(We cannot, of course, begin to list all the odd words you will meet with in your daily and Sunday crossword puzzles, for such words run into many thousands. But we have tried to include those which turn up most frequently, as well as many others which should be of help to you when you are unable to go any further.)

Also, we do not guarantee that the definitions in your puzzle will be exactly the same as ours, although we have checked every word with a standard dictionary and have followed its definition.

In nearly every case, we have used as the key word the principal noun of the definition, rather than any adjective, adjective phrase, or noun used as an adjective. And, to simplify your searching, we have grouped the words according to the number of spaces you have to fill.)

Words of Two Letters

Ambary, DA
And (French, Latin), ET
Article (Arabic), AL
(French), LA, LE, UN
(Spanish), EL, LA, UN
At the (French), AU
(Spanish), AL
Behold, LO
Bird: Hawaiian, OO
Birthplace: Abraham's, UR
Bone, OS
Buddha, FO
Butterfly: Peacock, IO
Champagne, AY
Chaos, NU
Chief: Burmese, BO
Coin: Roman, AS
Siamese, AT
Concerning, RE
Dialect: Chinese, WU
Double (Egy. relig.), KA
Drama: Japanese, NO
Egg (comb. form), OO
Esker, OS
Eye. (Scotch), EE
Factor: Amplification, MU
Fifty (Greek), NU
Fish: Carplike, ID
Force, OD
Forty (Greek), MU
From (French, Latin, Spanish), DE
(Latin prefix), AB

From the (French), DU
God: Babylonian, EA, ZU
Egyptian sun, RA
Hindu unknown, KA
Semitic, EL
Goddess: Babylonian, AI
Greek earth, GE
Gold (heraldry), OR
Gulf: Arctic, OB
Heart (Egy. relig.) AB
Indian: South American, GE
King: Of Bashan, OG
Language: Artificial, RO
Assamese, AO
Lava: Hawaiian, AA
Letter: Greek, MU, NU, PI, XI
Hebrew, HE, PE
Lily: Palm, TI
Measure: Annamese, LY
Chinese, HO, HU, KO, LI, MU, PU, TO, TU
Japanese, GO, JO, MO, RI, SE, TO
Metric land, AR
Netherlands, EL
Portuguese, PE
Siamese, WA
Swedish, AM
Type, EM, EN
Monk: Buddhist, BO

Month: Jewish, AB
Mouth, OS
Mulberry: Indian, AL
Native: Burmese, WA
Note: Of Scale, DO, FA, MI, LA, RE, TI
Of (French, Latin, Spanish), DE
Of the (French), DU
One (Scotch), AE
Pagoda: Chinese, TA
Plant: East Indian fiber, DA
Ridge: Sandy, AS, OS
River: Russian, OB
Sloth: Three-toed, AI
Soul (Egy. relig.), BA
Sound: Hindu mystic, OM
Suffix: Comparative, ER
The. See Article
To the: French, AU
Spanish, AL
Tree: Buddhist sacred, BO
Tribe: Assamese, AO
Type: Jumbled, PI
Weight: Annamese, TA
Chinese, LI
Danish, ES
Japanese, MO
Roman, AS
Whirlwind: Faeroe Is., OE
Yes (German), JA
(Italian, Spanish), SI
(Russian), DA

Words of Three Letters

- Adherent, IST
 Again, BIS
 Age, ERA
 Antelope: African, GNU, KOB
 Apricot: Japanese, UME
 Article (German), DAS, DEM, DEN, DER, DES, DIE, EIN
 (French), LES, UNE
 (Spanish), LAS, LOS, UNA
 Banana: Polynesian, FEI
 Barge, HOY
 Bass: African, IYO
 Beak, NEB, NIB
 Beard: Grain, AWN
 Beetle: June, DOR
 Being, ENS
 Berry: Hawthorn, HAW
 Beverage: Hawaiian, AVA
 Bird: Australian, EMU
 Crowlike, JAY
 Extinct, MOA
 Fabulous, ROC
 Frigate, IWA
 Parson, POE, TUE, TUI
 Sea, AUK
 Blackbird, ANI, ANO
 Born, NEE
 Bronze: Roman, AES
 Bugle: Yellow, IVA
 By way of, VIA
 Canton: Swiss, URI
 Cap: Turkish, FEZ
 Catnip, NEP
 Character: In "Faerie Queene," UNA
 Coin: Afghan, PUL
 Albanian, LEK
 British Guiana, BIT
 Bulgarian, LEV, LEW
 French, ECU, SOU
 Indian, PIE
 Japanese, SEN, YEN
 Korean, WON
 Lithuanian, LIT
 Macao, Timor, AVO
 Palestinian, MIL
 Persian, PUL
 Peruvian, SOL
 Rumanian, BAN, LEU, LEY
 Scandinavian, ORE
 Siamese, ATT
 See also Money of account
 Collection: Facts, ANA
 Commune: Belgian, ANS, ATH
 Netherlands, EDE, EPE
 Community: Russian, MIR
 Constellation: Southern, ARA
 Contraction: Poetic, EEN, EER, OER
 Covering: Apex of roof, EPI
- Crab: Fiddler, UCA
 Crag: Rocky, TOR
 Cry: Crow, rook, raven, CAW
 Cup: Wine, AMA
 Cymbal: Oriental, TAL, ZEL
 Disease: Silkworm, UJI
 Division: Danish territorial, AMT
 Geologic, EON
 Doctrine, ISM
 Dowry, DOT
 Dry (French), SEC
 Dynasty: Chinese, CHI, HAN, SUI, WEI, YIN
 Eagle: Sea, ERN
 Earth (comb. form), GEO
 Egg: Louse, NIT
 Eggs: Fish, ROE
 Emmet, ANT
 Enzyme, ASE
 Equal (comb. form), ISO
 Extension: building, ELL
 Far (comb. form), TEL
 Farewell, AVE
 Fiber: Palm, TAL
 Final, EPI
 Fish: Carplike, IDE
 Pikelike, GAR
 Flatfish, DAB
 Fleur-de-lis, LIS, LYS
 Food: Hawaiian, POI
 Formerly, NEE
 Friend (French), AMI
 Game: Card, LOO
 Garment: Camel-hair, ABA
 Gateway, DAR
 Gazelle: Tibetan, GOA
 Genus: Ducks, AIX
 Grasses, POA
 Grasses (maize), ZEA
 Herbs or shrubs, IVA
 Lizards, UTA
 Rodents (incl. house mice), MUS
 Ruminants (incl. cattle), BOS
 Swine, SUS
 Gibbon: Malay, LAR
 God: Assyrian, SIN
 Babylonian, ABU, ANU, BEL, HEA, SIN, UTU
 Irish sea, LER
 Phrygian, MEN
 Polynesian, ORO
 Goddess: Babylonian, AYA
 Etruscan, UNI
 Hindu, SRI, UMA, VAC
 Teutonic, RAN
 Governor: Algerian, DIY
 Turkish, BEY
 Grampus, ORC
 Grape, UVA
 Grass: Meadow, POA
 Gypsy, ROM
 Hail, AVE
 Hare: Female, DOE
- Hawthorn, HAW
 Hay: Spread for drying, TED
 Herb: Japanese, UDO
 Perennial, PIA
 Used for blue dye, WAD
 Herd: Whales, GAM, POD
 Hero: Spanish, CID
 High (music), ALT
 Honey (pharm.), MEL
 Humorist: American, ADE
 I (Latin), EGO
 I love (Latin), AMO
 Indian: Algonquian, FOX, SAC, WEA
 Chimakuan, HOH
 Keresan, SIA
 Mayan, MAM
 Shoshonean, UTE
 Siouan, KAW, OTO
 South American, ITE, ONA, URO, URU, YAO
 Tierra del Fuego, ONA
 Wakashan, AHT
 Ingot, PIG
 Inlet: Narrow, RIA
 Island: Cyclades, IOS
 Dodecanese, COS, KOS
 (French), ILE
 River, AIT
 Jackdaw, DAW
 John (Gaelic), IAN
 Keelbill, ANI, ANO
 Kiln, OST
 King: British legendary, LUD
 Kobold, NIS
 Lace: To make, TAT
 Lamprey, EEL
 Language: Artificial, IDO
 Bantu, ILA
 Siamese, LAO, TAI
 Leaf: Palm, OLA, OLE
 Leaving, ORT
 Left: Cause to turn, HAW
 Letter: Greek, CHI, ETA, PHI, PSI, RHO, TAU
 Hebrew, MEM, NUN, SIN, TAV, VAU
 Lettuce, COS
 Life (comb. form), BIO
 Lily: Palm, TOI
 Lizard, EFT
 Louse: Young, NIT
 Love (Anglo-Irish), GRA
 Lute: Oriental, TAR
 Macaw: Brazilian, ARA
 Marble, TAW
 Match: Shooting (French), TIR
 Meadow, LEA
 Measure: Abyssinian, TAT
 Algerian, PIK
 Annamese, GON, MAU, NGU, QUO, SAO, TAO, TAT
 Arabian, DEN, SAA

- Belgian, VAT
 Bulgarian, OKA, OKE
 Chinese, FEN, TOU, YIN
 Cloth, ELL
 Cyprus, OKA, OKE, PIK
 Czech, LAN, SAH
 Danish, FOD, MIL, POT
 Dominican Republic, ONA
 Dutch, old, AAM
 East Indian, KIT
 Egyptian, APT, HEN, PIK, ROB
 Electric, MHO, OHM
 Energy, ERG
 English, PIN
 Estonian, TUN
 French, POT
 German, AAM
 Greek, PIK
 Hebrew, CAB, HIN, KOR, LOG
 Hungarian, AKO
 Icelandic, FET
 Indian, GAZ, GUZ, JOW, KOS
 Japanese, BOO, CHO, KEN, RIN, SHO, SUN, TAN
 Malabar, ADY
 Metric land, ARE
 Netherlands, KAN, KOP, MUD, VAT, ZAK
 Norwegian, FOT, POT
 Persian, GAZ, GUZ, MOU, ZAR, ZER
 Polish, CAL
 Rangoon, DHA, LAN
 Roman, PES, URN
 Russian, FUT, LOF
 Scotch, COP
 Siamese, KEN, NIU, RAI, SAT, SEN, SOK, WAH, YOT
 Somaliland, TOP
 Spanish, PIE
 Straits Settlements, PAU, TUN
 Swedish, ALN, FOT, MIL, REF, TUM
 Swiss, POT
 Tunisian, SAA
 Turkish, OKA, OKE, PIK
 Wire, MIL
 Württemberg, IMI
 Yarn, LEA
 Yugoslavian, OKA, RIF
 Milk, LAC
 Milkfish, AWA
 Moccasin, PAC
 Money: Yap stone, FEI
 Money of Account: Anglo-Saxon, ORA, ORE
 French, SOU
 Indian, LAC
 Japanese, RIN
 Oman, GAJ
 Virgin Islands, BIT
 See also Coin
- Monkey: Capuchin, SAI
 Morsel, ORT
 Mother: Peer Gynt's, ASE
 Mountain: Asia Minor, IDA
 Mulberry: Indian, AAL, ACH, AWL
 Muttonbird: New Zealand, OII
 Nahoor, SNA
 Native: Mindanao, ATA
 Neckpiece, BOA
 Newt, EFT
 No (Scotch), NAE
 Note: Guido's highest, ELA
 Of scale, SOL
 Nursemaid: Oriental, AMA, IYA
 Ocher: Yellow, SIL
 One (Scotch), YIN
 Ornament: Pagoda, TEE
 Oven: Polynesian, UMU
 Ox: Tibetan, YAK
 Pagoda: Chinese, TAA
 Parrot: Hawk, HIA
 New Zealand, KEA
 Part: Footlike, PES
 Particle: Electrified, ION
 Pasha, DEY
 Pass: Mountain, COL
 Paste: Rice, AME
 Pea: Indian split, DAL
 Peasant: Philippine, TAO
 Penpoint, NEB, NIB
 Piece out, EKE
 Pigeon, NUN
 Pine: Textile screw, ARA
 Pistol (slang), GAT
 Pit: Baking, IMU
 Plant: Pepper, AVA
 Play: By Capek, RUR
 Poem: Old French, DIT
 Porgy: Japanese, TAI
 Priest: Biblical high, ELI
 Prince: Ethiopian, RAS
 Pseudonym: Dickens', BOZ
 Queen: Fairy, MAB
 Quince: Bengal, BEL
 Record: Ship's, LOG
 Refuse: Flax (Scotch), PAB, POB
 Resin, LAC
 Resort, SPA
 Revolver (slang), GAT
 Right: Cause to turn, GEE
 River: Scotch or English, DEE (Spanish), RIO
 Swiss, AAR
 Room: Harem, ODA
 Rootstock: Fern, ROI
 Rose (Persian), GUL
 Ruff: Female, REE
 Rule: Indian, RAJ
 Sailor, GOB, TAR
 Saint: Female (abbr.), STE
 Mohammedan, PIR
 Salt, SAL
 Sash: Japanese, OBI
 Scrap, ORT
- Seed: Poppy, MAW
 Small, PIP
 Self, EGO
 Serpent: Vedic sky, AHI
 Sesame, TIL
 Sheep: Female, EWE
 Indian, SHA
 Male, RAM
 Sheepfold (Scotch), REE
 Shelter, LEE
 Shield, ECU
 Shooting match (French), TIR
 Shrew: European, ERD
 Shrub: Evergreen, YEW
 Silkworm, ERI
 Snake, ASP, BOA
 Soak, RET
 Son-in-law: Mohammed's, ALI
 Sorrel: Wood, OCA
 Spade: Long, narrow, LOY
 Spirit: Malignant, KER
 Spot: Playing-card, PIP
 Spread for drying, TED
 Spring: Mineral, SPA
 Sprite: Water, NIX
 Statesman: Japanese, ITO
 Stern: Toward, AFT
 Stomach: Bird's, MAW
 Street (French), RUE
 Summer (French), ETE
 Sun, SOL
 Swamp, BOG, FEN
 Swan: Male, COB
 Tea: Chinese, CHA
 Temple: Shinto, SHA
 The. See Article
 Thing (law), RES
 Title: Etruscan, LAR
 Monk's, FRA
 Portuguese, DOM
 Spanish, DON
 Turkish, AGA, BEY
 Tool: Cutting, ADZ, AXE
 Mining, GAD
 Piercing, AWL
 Tree: Candelnut, AMA
 Central American, EBO
 East Indian, SAJ, SAL
 Evergreen, YEW
 Hawaiian, KOA, KOU
 Indian, BEL, DAR
 Linden, LIN
 New Zealand, AKE
 Philippine, DAO, TUA, TUI
 Rubber, ULE
 South American, APA
 Tribe: New Zealand, ATI
 Turmeric, REA
 Twice, BIS
 Twin: Siamese, ENG
 Uncle (dialect), EAM, EME
 Veil: Chalice, AER, AIR
 Vessel: Wine, AMA
 Vestment: Ecclesiastical, ALB

Vetch: Bitter, ERS
 Victorfish, AKU
 Vine: New Zealand, AKA
 Philippine, IYO
 Wallaba, APA
 Wapiti, ELK
 Water (French), EAU
 Waterfall, LIN
 Watering place: Prussian,
 EMS
 Weave: Designating plain,
 UNI
 Weight: Annamese, CAN
 Bulgarian, OKA, OKE
 Burmese, MOO, VIS
 Chinese, FEN, HAO, KIN,
 SSU, TAN, YIN

Cyprus, OKA, OKE
 Danish, LOD, ORT, VOG
 East Indian, TJI
 Egyptian, KAT, OKA, OKE
 English, for wool, TOD
 German, LOT
 Greek, MNA, OKA, OKE
 Indian, SER
 Japanese, FUN, KIN, RIN,
 SHI
 Korean, KON
 Malacca, KIP
 Mongolian, LAN
 Netherlands, ONS
 Norwegian, LOD
 Polish, LUT
 Rangoon, PAI
 Roman, BES

Russian, LOT
 Siamese, BAT, HAP, PAI
 Swedish, ASS, ORT
 Turkish, OKA, OKE
 Yugoslavian, OKA, OKE
 Whales: Herd, GAM, POD
 Wildebeest, GNU
 Wing, ALA
 Witticism, MOT
 Wolframite, CAL
 Worm: African, LOA
 Wreath: Hawaiian, LEI
 Yale, ELI
 Yam: Hawaiian, HOI
 Yes (French), OUI
 Young: Bring forth, EAN
 Z (letter), ZED

Words of Four Letters

Aborigine: Borneo, DYAK
 Agave, ALOE
 Animal: Footless, APOD
 Ant: White, ANAI, ANAY
 Antelope: African, ASSE,
 BISA, GUIB, KOBA,
 KUDU, ORYX, POKU,
 PUKU, TOPI, TORA
 Apoplexy: Plant, ESCA
 Apple, POME
 Apricot, ANSU
 Ardor, ELAN
 Armadillo, APAR, PEBA,
 PEVA, TATU
 Ascetic: Mohammedan,
 SUFU
 Association: Chinese, TONG
 Astronomer: Persian, OMAR
 Avatar: Of Vishnu, RAMA
 Axillary, ALAR
 Band: Horizontal (herald-
 dry), FESS
 Barracuda, SPET
 Bark: Mulberry, TAPA
 Base: Column, DADO
 Bearing (heraldry), ORLE
 Beer: Russian, KVAS
 Beige, ECRU
 Being, ESSE
 Beverage: Japanese rice,
 SAKE
 Bird: Asian, MINA, MYNA
 Egyptian sacred, IBIS
 Extinct, DODO, MAMO
 Flightless, KIWI
 Gull-like, TERN
 Hawaiian, IWI, MAMO
 Parson, KOKO
 Unfledged, EYAS
 Birds: As class, AVES
 Black, EBON
 (French), NOIR
 Blackbird: European, MERL
 Boat: Flat-bottomed, DORY
 Bone: Forearm, ULNA
 Bones, OSSA
 Box: Japanese, INRO
 Bravo (rare), EUGE

Buffalo: Indian wild, ARNA
 Bull (Spanish), TORO
 Burden, ONUS
 Cabbage: Sliced, SLAW
 Caliph: Mohammedan,
 OMAR
 Canoe: Malay, PRAU, PROA
 Cap: Military, KEPI
 Cape, NESS
 Capital: Ancient Irish,
 TARA
 Case: Article, ETUI
 Cat: Wild, BALU, EYRA
 Chalcedony, SARD
 Chamber: Indian ceremo-
 nial, KIVA
 Channel: Brain, ITER
 Cheese: Dutch, EDAM
 Chest: Sepulchral stone,
 CIST
 Chieftain: Arab, EMIR
 Church: Part of, APSE,
 NAVE
 (Scotch), KIRK
 Claim (law), LIEN
 Cluster: Flower, CYME
 Coin: Chinese, TAEI, YUAN
 German, MARK
 Indian, ANNA
 Iranian, RIAL
 Italian, LIRA
 Moroccan, OKIA
 Siamese, BAHT
 South American, PESO
 Spanish, DURO, PESO
 Turkish, PARA
 Commune: Belgian, AATH
 Composition: Musical,
 OPUS
 Compound: Chemical, DIOL
 Constellation: Southern,
 PAVO
 Council: Russian, DUMA
 Counsel, REDE
 Covering: Seed, ARIL
 Cross: Egyptian, ANKH
 Cry: Bacchanalian, EVOE
 Cup (Scotch), TASS

Cupbearer, SAKI
 Dagger, DIRK
 Malay, KRIS
 Dam: River, WEIR
 Dash, ELAN
 Date: Roman, IDES
 Dawn: Pertaining to, EOAN
 Dean: English, INGE
 Decay: In fruit, BLET
 Deer: Sambar, MAHA
 Disease: Skin, ACNE
 Disk: Solar, ATEN
 Dog: Hunting, ALAN
 Drink: Hindu intoxicating,
 SOMA
 Duck, SMEE, SMEW, TEAL
 Dynasty: Chinese, CHEN,
 CHIN, CHOU, CHOW,
 HSIA, MING, SUNG,
 TANG, TSIN
 Mongol, YUAN
 Eagle: Biblical, GIER
 Sea, ERNE
 Egyptian: Christian, COPT
 Ear: Pertaining to, OTIC
 Entrance: Mine, ADIT
 Esau, EDOM
 Escutcheon: Voided, ORLE
 Eskers, OSAR
 Evergreen: New Zealand,
 TAWA
 Fairy: Persian, PERI
 Family: Italian, ESTE
 Far (comb. form), TELE
 Farewell, VALE
 Father (French), PERE
 Fennel: Philippine, ANIS
 Fever: Malarial, AGUE
 Fiber: East Indian, JUTE
 Firn, NEVE
 Fish: Carplike, DACE
 Hawaiian, ULUA
 Herringlike, SHAD
 Mackerellike, CERO
 Marine, HAKE
 Sea, LING, MERO, OPAH
 Spiny-finned, GOBY
 Food: Tropical, TARO

- Foot: Metric, IAMB
 Formerly, ERST
 Founder: Of Carthage, DIDO
 France: Southern, MIDI
 Furze, ULEX
 Gaelic, ERSE
 Gaiter, SPAT
 Game: Card, FARO, SKAT
 Garlic: European wild, MOLY
 Garment: Hindu, SARI
 Roman, TOGA
 Gazelle, CORA
 Gem, JADE, ONYX, OPAL, RUBY
 Genus: Amphibians (incl. frogs), RANA
 Amphibians (incl. tree toads), HYLE
 Antelopes, ORYX
 Auks, ALCA, URIA
 Bees, APIS
 Birds (American ostriches), RHEA
 Birds (cranes), GRUS
 Birds (magpies), PICA
 Birds (peacocks), PAVO
 Cetaceans, INIA
 Ducks (incl. mallards), ANAS
 Fishes (burbots), LOTA
 Fishes (incl. bowfins), AMIA
 Genus: Geese (snow geese), CHEN
 Gulls, XEMA
 Herbs, ARUM, GEUM
 Insects (water scorpions), NEPA
 Lilies, ALOE
 Mammals (mankind), HOMO
 Orchids, DISA
 Owls, ASIO, BUBO, OTUS
 Palms, NIPA
 Sea birds, SULA
 Sheep, OVIS
 Shrubs, Eurasian, ULEX
 Shrubs (hollies), ILEX
 Shrubs (incl. Virginia Willow), ITEA
 Shrubs, tropical, EVEA
 Snakes (sand snakes), ERYX
 Swans, OLOR
 Trees, chocolate, COLA
 Trees (ebony family), MABA
 Trees (incl. maples), ACER
 Trees (Olives), OLEA
 Trees, tropical, EVEA
 Turtles, EMYS
 Goat: Wild, IBEX, KRAS, TAHR, TAIR, THAR
 God: Assyrian, ASUR
 Babylonian, ADAD, ADDU, ENKI, ENZU, IRRA, NABU, NEBO, UTUG
 Celtic, LLEU, LLEW
 Hindu, AGNI, CIVA, DEVA, DEWA, KAMA, RAMA, SIVA, VAYU
 Phrygian, ATYS
 Semitic, BAAL
 Teutonic, HLER
 Goddess: Babylonian, ERUA, GULA
 Hawaiian, PELE
 Hindu, DEVI, KALI, SHRI, VACH
 Gooseberry: Hawaiian, POHA
 Gourd, PEPO
 Grafted (heraldry), ENTE
 Grandfather (obsolete), AIEL
 Grandparents: Pertaining to, AVAL
 Grass: Hawaiian, HILO
 Gray (French), GRIS
 Green (heraldry), VERT
 Groom: Indian, SYCE
 Half (prefix), DEMI, HEMI, SEMI
 Hamlet, DORP
 Hammer-head: Part of, PEEN
 Handle, ANSA
 Harp: Japanese, KOTO
 Hartebeest, ASSE, TORA
 Hautboy, OBOE
 Hawk: Taken from nest (falconry), EYAS
 Hearing (law), OYER
 Heater: For liquids, ETNA
 Herb: Aromatic, ANET, DILL
 Fabulous, MOLY
 Perennial, GEUM, SEGO
 Pot, WORT
 Used for blue dye, WADE, WOAD
 Hill: Flat-topped, MESA
 Sand, DENE, DUNE
 Hoarfrost, RIME
 Hog: Immature female, GILT
 Holly, ILEX
 House: Cow, BYRE (Spanish), CASA
 Ice: Floating, FLOE
 Image, ICON, IKON
 Incarnation: Of Vishnu, RAMA
 Indian: Algonquian, CREE, SAUK
 Central American, MAYA
 Iroquoian, ERIE
 Mexican, CORA
 Peruvian, CANA, INCA, MORO
 Shoshonean, HOPI
 Siouan, OTOE
 Southwestern, HOPI, PIMA, YUMA, ZUNI
 Insect: Immature, PUPA
 Instrument: Stringed, LUTE, LYRE
 Ireland, EIRE, ERIN
 Jacket: English, ETON
 Jail (British), GAOL
 Jar, OLLA
 Judge: Mohammedan, CADJ
 Juniper: European, CADE
 Kiln, OAST, OVEN
 King: British legendary, LUDD, NUDD
 Kiss, BUSS
 Knife: Philippine, BOLO
 Koran: Section of, SURA
 Laborer: Spanish American, PEON
 Lake: Mountain, TARN (Scotch), LOCH
 Lamp: Miner's, DAVY
 Landing place: Indian, GHAT
 Language: Buddhist, PALI
 Japanese, AINU
 Latvian, LETT
 Layer: Of iris, UVEA
 Leaf: Palm, OLAY, OLLA
 Legislature: Ukrainian, RADA
 Lemur, LORI
 Leopard, PARD
 Let it stand, STET
 Letter: Greek, BETA, IOTA, ZETA
 Hebrew, AYIN, BETH, CAPH, KOPH, RESH, SHIN, TETH, YODH
 Papa, BULL
 Lily, ALOE
 Literature: Hindu sacred, VEDA
 Lizard, GILA
 Monitor, URAN
 Loquat, BIWA
 Magistrate: Genoese or Venetian, DOGE
 Man (Latin), HOMO
 Mark: Omission, DELE
 Marmoset: South American, MICO
 Meadow: Fertile, VEGA
 Measure: Electric, VOLT, WATT
 Force, DYNE
 Hebrew, OMER
 Printing, PICA
 Spanish or Portuguese, VARA
 Swiss land, IMMI
 Medley, OLIO
 Merganser, SMEW
 Milk (French), LAIT
 Molding, GULA
 Curved, OGEE
 Mongoose: Crab-eating, URVA

- Monk: Tibetan, LAMA
 Monkey: African, MONA,
 WAAG
 Ceylonese, MAHA
 Cochin-China, DOUC
 South American, SAKI,
 TITI
 Monkshood, ATIS
 Month: Jewish, ADAR,
 ELUL, IYAR
 Mother (French), MERE
 Mountain: Thessaly, OSSA
 Mouse: Meadow, VOLE
 Mythology: Norse, EDDA
 Nail (French), CLOU
 Native: Philippine, MORO
 Nest: Of pheasants, NIDE
 Network, RETE
 No (German), NEIN
 Noble: Mohammedan, AMIR
 Notice: Death, OBIT
 Novel: By Zola, NANA
 Nursemaid: Oriental
 AMAH, AYAH, EYAH
 Nut: Philippine, PILI
 Oak: Holm, ILEX
 Oil (comb. form), OLEO
 Ostrich: American, RHEA
 Oven, KILN, OAST
 Owl: Barn, LULU
 Ox: Celebes wild, ANOE
 Extinct wild, URUS
 Palm, ATAP, NIPA, SAGO
 Parliament, DIET
 Parrot: New Zealand, KAKA
 Pass: Indian mountain,
 GHAT
 Passage: Closing (music),
 CODA
 Peach: Clingstone, PAVY
 Peasant: Indian, RYOT
 Old English, CARL
 Pepper: Australasian, KAVA
 Perfume, ATAR
 Persia, IRAN
 Person: Extraordinary,
 ONER
 Pickerel or pike, ESOX
 Pitcher, EWER
 Plant: Aromatic, NARD
 Century, ALOE
 Indigo, ANIL
 Pepper, KAVA
 Platform: Raised, DAIS
 Plum: Wild, SLOE
 Pods: Vegetable, OKRA,
 OKRO
 Poem: Epic, EPOS
 Poet: Persian, OMAR
 Roman, OVID
 Poison, BANE
 Arrow, INEE
 Porkfish, SISI
 Portico: Greek, STOA
 Premium, AGIO
 Priest: Mohammedan,
 IMAM
 Prima donna, DIVA
 Prong: Fork, TINE
 Pseudonym: Lamb's, ELIA
 Queen: Carthaginian, DIDO
 Hindu, RANI
 Rabbit, CONY
 Race: Of Japan, AINU
 Rall: Ducklike, COOT
 North American, SORA
 Redshank, CLEE
 Refuse: After pressing,
 MARC
 Regiment: Turkish, ALAI
 Reliquary, ARCA
 Resort: Italian, LIDO
 Ridges: Sandy, ASAR, OSAR
 River: German, ELBE,
 ODER
 Italian, ADDA
 Siberian, LENA
 Road: Roman, ITER
 Rockfish: California, RENA
 Rodent: Mouselike, VOLE
 South American, PACA
 Rootstock, TARO
 Salamander, NEWT
 Salmon: Silver, COHO
 Young, PARR
 Same (Greek), HOMO
 (Latin), IDEM
 Sauce: Fish, ALEC
 School: English, ETON
 Seaweed, AGAR, ALGA,
 KELP
 Secular, LAIC
 Sediment, SILT
 Seed: Dill, ANET
 Of vetch, TARE
 Serf, ILOT
 Sesame, TEEL
 Settlement: Eskimo, ETAH
 Shark: Atlantic, GATA
 European, TOPE
 Sheep: Wild, UDAD
 Sheltered, ALEE
 Shield, EGIS
 Ship: Jason's, ARGO
 Left side of, PORT
 Two-masted, BRIG
 Shrine: Buddhist, TOPE
 Shrub: New Zealand, TUTU
 Sign: Magic, RUNE
 Silkworm, ERIA
 Skin: Beaver, PLEW
 Skink: Egyptian, ADDA
 Slave, ESNE
 Sloth: Two-toed, UNAU
 Smooth, LENE
 Snow: Glacial, NEVE
 Soapstone, TALC
 Society: African secret,
 EGBO, PORO
 Son: Of Seth, ENOS
 Song (German), LIED
 Unaccompanied, GLEE
 Sound: Lung, RALE
 Sour, ACID
 Sow: Young, GILT
 Spike: Brad-shaped, BROB
 Spirit: Buddhist evil, MARA
 Stake: Poker, ANTE
 Star: Temporary, NOVA
 Starch: East Indian, SAGO
 Stone: Precious, OPAL
 Strap: Bridle, REIN
 Strewn (heraldry), SEME
 Sweetsop, ATEs, ATTA
 Sword: Fencing, EPEE, FOIL
 Tambourine: African, TAAR
 Tapir: Brazilian, ANTA
 Tax, CESS
 Tea: South American,
 MATE
 Therefore (Latin), ERGO
 Thing: Extraordinary,
 ONER
 Three (dice, cards, etc.),
 TREY
 Thrush: Hawaiian, OMAO
 Tide, NEAP
 Tipster: Racing, TOUT
 Tissue, TELA
 Title: Etruscan, LARS
 Hindu, BABU
 Indian, RAJA
 Mohammedan, EMIR,
 IMAM
 Persian, BABA
 Spanish, DONA
 Turkish, AGHA, BABA
 Toad: Largest known, AGUA
 Tree, HYLA
 Tool: Cutting, ADZE
 Track: Deer, SLOT
 Tract: Sandy, DENE
 Tree: Apple, SORB
 Central American, EBOE
 East Indian, TEAK
 Eucalyptus, YATE
 Guiana and Trinidad,
 MORA
 Japanese, UPAS
 Linden, LIME, LINN,
 TEIL, TILL
 Sandarac, ARAR
 Sassafras, AGUE
 Tamarisk salt, ATLE
 Tribe: Moro, SULU
 Trout, CHAR
 Urchin: Street, ARAB
 Vessel: Arab, DHOW
 Vestment: Ecclesiastical,
 COPE
 Vetch, TARE
 Vine: East Indian, SOMA
 Violinist: Famous, AUER
 Vortex, EDDY
 Wampum, PEAG
 Wapiti, STAG
 Waste: Allowance for, TRET
 Watchman: Indian, MINA
 Water (Spanish), AGUA
 Waterfall, LINN
 Wavy (heraldry), ONDE,
 UNDE
 Wax, CERE
 Chinese, PELA

Weed: Biblical, TARE
Weight: Ancient, MINA
Danish (pl.), ESER
East Asian, TAEI
Greek, MINA
Siamese, BAHT
Well done (rare), EUGE
Whale, CETE

Killer, ORCA
White, HUSE, HUSO
Whirlpool, EDDY
Wife: Of Geraint, ENID
Willow: Virginia, ITEA
Wine, PORT
Winged, ALAR
(Heraldry), AILE

Wings, ALAE
Withered, SERE
Without (French), SANS
Wool: To comb, CARD
Work, OPUS
Wrong: Civil, TORT
Young: Bring forth, YEAN

Words of Five Letters

Abode of dead: Babylonian, ARALU
Aborigine: Borneo, DAYAK
Aftersong, EPODE
Aloe, AGAVE
Animal: Footless, APODE
Ant, EMMET
Antelope: African, ADDAX, BEISA,
CAAMA, ELAND, GUIBA, ORIBI,
TIANG
Goat, GORAL, SEROW
Indian, SASIN
Siberian, SAIGA
Arch: Pointed, OGIVE
Armadillo, APARA, POYOU, TATOU
Arrowroot, ARARU
Artery: Trunk, AORTA
Association: Russian, ARTEL
Secret, CABAL
Author: English, READE
Automaton, GOLEM, ROBOT
Award: Motion-picture, OSCAR
Basket: Fishing, CREEL
Beer: Russian, KVAAS
Bible: Mohammedan, KORAN
Bird: Asian, MINAH, MYNAH
Indian, SHAMA
Larklike, PIPIT
Loonlike, GREBE
Oscine, VIREO
South American, AGAMI
Swimming, GREBE
Black: (French), NOIRE
(Heraldry), SABLE
Blackbird: European, MERLE, OUSEL,
OUZEL
Block: Glacial, SERAC
Blue (heraldry), AZURE
Boat: Eskimo, BIDAR, UMIAC
Bobwhite, COLIN, QUAIL
Bone (comb. form), OSTEO
Leg, TIBIA
Thigh, FEMUR
Broom: Twig, BESOM
Brother (French), FRERE
Moses', AARON
Canoe: Eskimo, BIDAR, KAYAK
Cape: Papal, FANON, ORALE
Caravansary, SERAI
Card: Old playing, TAROT
Caterpillar: New Zealand, AWETO
Catkin, AMENT
Cavity: Stone, GEODE
Cephalopod, SQUID
Cetacean, WHALE
Chariot, ESSED
Cheek: Pertaining to, MALAR
Chieftain: Arab, EMEER
Child (Scotch), BAIRN

Cigar, CLARO
Coating: Seed, TESTA
Cockatoo: Palm, ARARA
Coin: Costa Rican, COLON
Danish, KRONE
Ecuadorian, SUCRE
English, GROAT, PENCE
French, FRANC
German, KRONE, TALER
Hungarian, PENGÓ
Icelandic, KRONA
Indian, RUPEE
Iraqi, DINAR
Norwegian, KRONE
Polish, ZLOTY
Russian, COPEC, KOPEK, RUBLE
Swedish, KRONA
Turkish, ASPER
Yugoslav, DINAR
Collar: Papal, FANON, ORALE
Roman, RABAT
Commune: Italian, TREIA
Composition: Choral, MOTET
Compound: Chemical, ESTER
Conceal (law), ELOIN
Council: Ecclesiastical, SYNOD
Court: Anglo-Saxon, GEMOT
Inner, PATIO
Crest: Mountain, ARETE
Crown: Papal, TIARA
Cuttlefish, SEPIA
Date: Roman, NONES
Decree: Mohammedan, IRADE
Russian, UKASE
Deposit: Loam, LOESS
Desert: Gobi, SHAMO
Devilfish, MANTA
Disease: Cereals, ERGOT
Disk, PATEN
Dog: Wild, DHOLE, DINGO
Dormouse, LEROT
Drum, TABOR
Duck: Sea, EIDER
Dynasty: Chinese, CHING, LIANG, SHANG
Earthquake, SEISM
Eel, ELVER, MORAY
Ermine: European, STOAT
Ether: Crystalline, APIOL
Fabric: Velvetlike, PANNE
Fabulist, AESOP
Family: Italian, CENCI
Fiber: West Indian, SISAL
Fig: Smyrna, ELEME, ELEMI
Figure: Of speech, TROPE
Finch: European, SERIN
Fish: American small, KILLY
Flower: Garden, ASTER
Friend (Spanish), AMIGO

- Fruit: Tropical, MANGO
 Fungus: Rye, ERGOT
 Furze, GORSE
 Gateway, TORAN, TORII
 Gem, AGATE, BERYL, PEARL, TOPAZ
 Genus: Barnacles, LEPAS
 Bears, URSUS
 Birds (loons), GAVIA
 Birds (nuthatches), SITTA
 Cats, FELIS
 Dogs, CANIS
 Fishes (chiro), ELOPS
 Fishes (perch), PERCA
 Geese, ANSER
 Grasses, STIPA
 Grasses (incl. oats), AVENA
 Gulls, LARUS
 Hares, rabbits, LEPUS
 Hawks, BUTEO
 Herbs, old world, INULA
 Herbs, trailing or climbing, APIOS
 Herbs, tropical, TACCA, URENA
 Horses, EQUUS
 Insects (olive files), DACUS
 Lice, plant, APHIS
 Lichens, USNEA
 Lizards, AGAMA
 Moles, TALPA
 Mollusks, OLIVA
 Monkeys, CEBUS
 Palms, ARECA
 Pigeons, GOURA
 Plants (amaryllis family), AGAVE
 Ruminants (goats), CAPRA
 Shrubs, Asiatic, SABIA
 Shrubs (heath), ERICA
 Shrubs (incl. raspberry), RUBUS
 Shrubs, tropical, IXORA, TREMA,
 URENA
 Ticks, ARGAS
 Trees (of elm family), TREMA, ULMUS
 Trees, tropical, IXORA, TREMA
 Goat: Bezoar, PASAN
 God: Assyrian, ASHIR, ASHUR, ASSUR
 Babylonian, DAGAN, SIRIS
 Gaelic, DAGDA
 Hindu, BHAGA, INDRA, SHIVA
 Japanese, EBISU
 Philistine, DAGON
 Phrygian, ATTIS
 Teutonic, AEGIR, GYMIR
 Welsh, DYLAN
 Goddess: Babylonian, ISTAR, NANAI
 Hindu, DURGA, GAURI, SHREE
 Group: Of six, HEXAD
 Grove: Sacred to Diana, NEMUS
 Growing out, ENATE
 Guitar: Hindu, SITAR
 Gull: PEWEE, PEWIT
 Hartebeest, CAAMA
 Headdress: Jewish or Persian, TIARA
 Liturgical, MITER, MITRE
 Heath, ERICA
 Herb: Grasslike marsh, SEDGE
 Heron, EGRET
 Hog: Young, SHOAT, SHOTE
 Image, EIKON
 Indian: Cariban, ARARA
 Iroquoian, HURON
 Mexican, AZTEC, OPATA, OTOMI
 Muskhogeian, CREEK
 Siouan, OSAGE, TETON
 Spanish American, ARARA, CARIB
 Inflorescence: Racemose, AMENT
 Insect: Immature, LARVA
 Intrigue, CABAL
 Iris: Yellow, SEDGE
 Juniper, GORSE, RETEM
 Kidneys: Pertaining to, RENAL
 King: British legendary, LLUDD
 Kite: European, GLEDE
 Kobold, NISSE
 Land: Cultivated, ARADA, ARADO
 Landholder (Scotch), LAIRD, THANE
 Language: Dravidian, TAMIL
 Lariat, LASSO, REATA
 Laughing, RIAINT
 Lawgiver: Athenian, DRACO, SOLON
 Leaf: Calyx, SEPAL
 Fern, FROND
 Lemur, LORIS
 Letter: English, AITCH
 Greek, ALPHA, DELTA, GAMMA,
 KAPPA, OMEGA, SIGMA, THETA
 Hebrew, ALEPH, CHETH, GIMEL,
 SADHE, ZAYIN
 Lichen, USNEA
 Lighthouse, PHARE
 Lizard: Old World, AGAMA
 Loincloth, DHOTI
 Louse: Plant, APHID
 Macaw: Brazilian, ARARA
 Mahogany: Philippine, ALMON
 Mammal: Badgerlike, RATEL
 Civetlike, GENET
 Giraffelike, OKAPI
 Raccoonlike, COATI
 Man (French), HOMME
 Marble, AGATE
 Mark: Insertion, CARET
 Market place: Greek, AGORA
 Marsupial: Australian, KOALA
 Measure: Electric, FARAD, HENRY
 Energy, JOULE
 Metric, LITER, STERE
 Printing, AGATE
 Russian, VERST
 Mixture: Smelting, MATTE
 Mohicans: Last of, UNCAS
 Molding: Convex, OVOLO, TORUS
 Mole, TALPA
 Monkey: African, PATAS
 Capuchin, SAJOU
 Howling, ARABA
 Monkshood, ATEES
 Month: Jewish, NISAN, SIVAN, TEBET
 Museum (French), MUSEE
 Musketeer, ATHOS
 Native: Aleutian, ALEUT
 New Zealand, MAORI
 Neckpiece: Ecclesiastical, AMICE
 Nerve (comb. form), NEURO
 Nest: Eagle's or hawk's, AERIE
 Insect's, NIDUS
 Net: Fishing, SEINE
 Newsstand, KIOSK

- Nitrogen, AZOTE
 Noble: Mohammedan, AMEER
 Nodule: Stone, GEODE
 Nostrils, NARES
 Notched irregularly, EROSE
 Nymph: Mohammedan, HOURI
 Official: Roman, EDILE
 Oleoresin, ELEMI
 Opening: Mouthlike, STOMA
 Oration: Funeral, ELOGE
 Ostiole, STOMA
 Page: Left-hand, VERSO
 Right-hand, RECTO
 Palm, ARECA, BETEL
 Park: Colorado, ESTES
 Perfume, ATTAR
 Philosopher: Greek, PLATO
 Pillar: Stone, STELA, STELE
 Pinnacle: Glacial, SERAC
 Plain, LLANO
 Plant: Century, AGAVE
 Climbing, LIANA
 Dwarf, CUMIN
 East Asian perennial, RAMIE
 Medicinal, SENNA
 Mustard family, CRESS
 Plate: Communion, PATEN
 Poem: Lyric, EPODE
 Point: Lowest, NADIR
 Poplar, ABELE, ALAMO, ASPEN
 Porridge: Spanish American, ATOLE
 Post: Stair, NEWEL
 Priest: Mohammedan, IMAUM
 Protozoan, AMEBA
 Queen: (French), REINE
 Hindu, RANEE
 Rabbit, CONEY
 Rail, CRAKE
 Red (heraldry), GULES
 Religion: Moslem, ISLAM
 Resin, ELEMI
 Revoke (law), ADEEM
 Rich man, MIDAS, NABOB
 Ridge: Sandy, ESKAR, ESKER
 River: French, LOIRE, SEINE
 Rockfish: California, REINA
 Rootstock: Fragrant, ORRIS
 Ruff: Female, REEVE
 Sack: Pack, KYACK
 Salt: Ethereal, ESTER
 Saltpeter, NITER, NITRE
 Salutation: Eastern, SALAM
 Sandpiper: Old World, TEREK
 Scented, OLENT
 School: Fish, SHOAL
 French public, LYCEE
 Scriptures: Mohammedan, KORAN
 Seaweeds, ALGAE
 Seed: Aromatic, ANISE
 Seraglio, HAREM, SERAI
 Serf, HELOT
 Sheep: Wild, AUDAD
 Sheeplike, OVINE
 Shield, AEGIS
 Shoe: Wooden, SABOT
 Shoots: Pickled bamboo, ACHAR
 Shot: Billiard, CAROM, MASSE
 Shrine: Buddhist, STUPA
 Shrub: Burning bush, WAHOO
 Ornamental evergreen, TOYON
 Used in tanning, SUMAC
 Silk: Watered, MOIRE
 Sister (French), SOEUR
 (Latin), SOROR
 Six: Group of, HEXAD
 Skeleton: Marine, CORAL
 Slave, HELOT
 Snake, ABOMA, ADDER, COBRA, RACER
 Soldier: French, POILU
 Indian, SEPOY
 Sour, ACERB
 Spirit: Air, ARIEL
 Staff: Shepherd's, CROOK
 Starwort, ASTER
 Steel (German), STAHL
 Stockade: Russian, ETAPE
 Stop (nautical), AVAST
 Storehouse, ETAPE
 Subway: Parisian, METRO
 Tapestry, ARRAS
 Tea: Paraguayan, YERBA
 Temple: Hawaiian, HEIAU
 Terminal: Positive, ANODE
 Theater: Greek, ODEON, ODEUM
 Then (French), ALORS
 Thread: Surgical, SETON
 Thrush: Wilson's, VEERY
 Title: Hindu, BABOO
 Indian, RAJAH, SAHEB, SAHIB
 Mohammedan, EMEER, IMAUM
 Tree: Buddhist sacred, PIPAL
 East Indian cotton, SIMAL
 Hickory, PECAN
 Light-wooded, BALSAM
 Malayan, TERAP
 Mediterranean, CAROB
 Mexican, ABETO
 Mexican pine, OCOTE
 New Zealand, MAIRE
 Philippine, ALMON
 Rain, SAMAN
 South American, UMU
 Tamarack, LARCH
 Tamarisk salt, ATLEE
 West Indian, ACANA
 Trout, CHARR
 Troy, ILION, ILIUM
 Twin: Siamese, CHANG
 Vestment: Ecclesiastical, STOLE
 Violin: Famous, AMATI, STRAD
 Volcano: Mud, SALSE
 Wampum, PEAGE
 War cry: Greek, ALALA
 Wavy (heraldry), UNDEE
 Weight: Jewish, GERAH
 Wen, TALPA
 Wheat, SPELT
 Wheel: Persian water, NORIA
 Whitefish, CISCO
 Willow, OSIER
 Window: Bay, ORIEL
 Wine, MEDOC, RHINE, TINTA, TOKAY
 Winged, ALATE
 Woman (French), FEMME
 Year: Excess of solar over lunar, EPACT
 Zoroastrian, PARSI

Words of Six or More Letters

- Agave, MAGUEY
 Alkaloid: Crystalline, ESERIN, ESERINE
 Alligator, CAYMAN
 Amphibole, EDENITE, URALITE
 Ant: White, TERMITES
 Antelope: African, DIKDIK, DUIKER, GEMSBOK, IMPALA, KOODOO
 European, CHAMOIS
 Indian, NILGAI, NILGAU, NILGHAI, NILGHAU
 Ape: Asian or East Indian, GIBBON
 Appendage: Leaf, STIPEL, STIPULE
 Armadillo, PELUDO, TATOUAY
 Arrowroot, ARARAO
 Ascetic: Jewish, ESSENE
 Ass: Asian wild, ONAGER
 Avatar: Of Vishnu, KRISHNA
 Babylonian, ELAMITE
 Badge: Shoulder, EPAULET
 Baldness, ALOPECIA
 Barracuda, SENNET
 Bark: Aromatic, SINTOC
 Bearlike, URSINE
 Beetle, ELATER
 Bible: Zoroastrian, AVESTA
 Bird: Sea, PETREL
 South American, SERIEMA
 Wading, AVOCET, AVOSET
 Bone: Leg, FIBULA
 Branched, RAMATE
 Brother (Latin), FRATER
 Bunting: European, ORTOLAN
 Call: Trumpet, SENNET
 Canoe: Eskimo, BAIKAR, OOMIAK
 Caravansary, IMARET
 Cat: Asian or African, CHEETAH
 Leopardlike, OCELOT
 Cenobite: Jewish, ESSENE
 Centerpiece: Table, EPERGNE
 Cetacean, DOLPHIN, PORPOISE
 Chariot, ESSEDA, ESSEDE
 Chief: Seminole, OSCEOLA
 Claim: Release as (law), REMISE
 Clock: Water, CLEPSYDRA
 Cloud, CUMULUS, NIMBUS
 Coach: French hackney, FIACRE
 Coin: Czech, KORUNA
 Ethiopian, TALARI
 Finnish, MARKKA
 German, THALER
 Greek, DRACHMA
 Haitian, GOURDE
 Honduran, LEMPIRA
 Hungarian, FORINT
 Indo-Chinese, PIASTER
 Netherlands, GUILDER
 Panamanian, BALBOA
 Paraguayan, GUARANI
 Portuguese, ESCUDO
 Russian, COPECK, KOPECK, ROUBLE
 Spanish, PESETA
 Venezuelan, BOLIVAR
 Communion: Last holy, VIATICUM
 Conceal (law), ELOIGN
 Confection, PRALINE
 Construction: Sentence, SYNTAX
 Convexity: Shaft of column, ENTASIS
 Court: Anglo-Saxon, GEMOTE
 Cow: Sea, DUGONG, MANATEE
 Cylindrical, TERETE
 Dagger, STILETTO
 Malay, CREESE, KREESE
 Date: Roman, CALENDIS, KALENDIS
 Deer, CARIBOU, WAPITI
 Disease: Plant, ERINOSE
 Doorkeeper, OSTIARY
 Dragonflies: Order of, ODANATA
 Drink: Of gods, NECTAR
 Drum: TABOUR
 Moorish, ATABAL, ATTABAL
 Duck: Fish-eating, MERGANSER
 Sea, SCOTER
 Dynasty: Chinese, MANCHU
 Eel, CONGER
 Edit, REDACT
 Envelope: Flower, PERIANTH
 Eskimo, AMERIND
 Ether: Crystalline, APIOLE
 Excuse (law), ESSOIN
 Eyespots, OCELLI
 Fabric, ESTAMENE, ESTAMIN, ETAMINE
 Falcon: European, KESTREL
 Figure: Used as column, CARYATID, TELAMON
 Fine: For punishment, AMERCE
 Fish: Asian fresh-water, GOURAMI
 Pikelike, BARRACUDA
 Five: Group of, PENTAD
 Fly: African, TSETSE
 Foot: Metric, ANAPEST, IAMBUS
 Foxlike, VULPINE
 Frying pan, SPIDER
 Fur, KARAKUL
 Galley: Greek or Roman, BIREME, TRIREME
 Game: Card, ECARTE
 Garment: Greek, CHLAMYS
 Gateway, GOPURA, TORANA
 Genus: Birds (ravens, crows), CORVUS
 Eels, CONGER
 Fishes, ANABAS
 Foxes, VULPES
 Herbs, ANEMONE
 Insects, CICADA
 Lemurs, GALAGO
 Mints (incl. catnip), NEPETA
 Mollusks, ANOMIA, ASTARTE, TEREDO
 Mollusks (incl. oysters), OSTREA
 Monkeys (spider monkeys), ATELES
 Thrushes (incl. robins), TURDUS
 Trees (of elm family), CELTIS
 Trees (incl. dogwood), CORNUS
 Trees, tropical American, SAPOTA
 Wrens, NANNUS
 Gibbon, SIAMANG, WOUWOU
 Gland: Salivary, RACEMOSE
 Goat: Bezoar, PASANG
 Goatlike, CAPRINE
 God: Assyrian, ASHSHUR, ASSHUR
 Babylonian, BABBAR, MARDUK, MERO-DACH, NANNAR, NERGAL, SHAMASH
 Hindu, BRAHMA, KRISHNA, VISHNU
 Tahitian, TAAROA
 Goddess: Babylonian, ISHTAR

- Hindu, CHANDI, HAIMAVATI,
 LAKSHMI, PARVATI, SARASVATI,
 SARASWATI
 Government, POLITY
 Governor: Persian, SATRAP
 Grandson (Scotch), NEPOTE
 Group: Of five, PENTAD
 Of nine, ENNEAD
 Of seven, HEPTAD
 Hare: In first year, LEVERET
 Harpsichord, SPINET
 Herb: Alpine, EDELWEISS
 Chinese, GINSENG
 South African, FREESIA
 Hermit, EREMITTE
 Hero: Legendary, PALADIN
 Heron, BITTERN
 Horselike, EQUINE
 Hound: Short-legged, BEAGLE
 House (French), MAISON
 Idiot, CRETIN
 Implement: Stone, NEOLITH
 Incarnation: Hindu, AVATAR
 Indian, APACHE, COMMANCHE, PAIUTE,
 SENECA
 Inn: Turkish, IMARET
 Insects: Order of, DIPTERA
 Instrument: Japanese banjolike, SAMISEN
 Musical, CLAVIER, SPINET
 Interstice, AREOLA
 Ironwood, COLIMA
 Juniper: Old Testament, RAETAM
 Kettledrum, ATABAL
 King: Fairy, OBERON
 Kneecap, PATELLA
 Knife, MACHETE
 Langur: Sumatran, SIMPAI
 Legislature: Spanish, CORTES
 Lemur: African, GALAGO
 Madagascar, AYEAYE
 Letter: Greek, EPSILON, LAMBDA, OMI-
 CRON, UPSILON
 Hebrew: DALETH, LAMEDH, SAMEKH
 Lighthouse, PHAROS
 Lizard, IGUANA
 Llama, ALPACA
 Lockjaw, TETANUS
 Locust, CICADA, CICALA
 Macaw: Brazilian, MARACAN
 Maid: Of Astolat, ELAINE
 Mammal: Madagascar, TENDRAC,
 TENREC
 Man (Spanish), HOMBRE
 Marmoset: South American, TAMARIN
 Marsupial, BANDICOOT, WOMBAT
 Massacre, POGROM
 Mayor: Spanish, ALCALDE
 Measure: Electric, AMPERE, COULOMB,
 KILOWATT
 Medicine: Quack, NOSTRUM
 Member: Religious order, CENOBITE
 Molasses, TREACLE
 Monkey: African, GRIVET, NISNAS
 Asian, LANGUR
 Philippine, MACHIN
 South American, PINCHE, SAIMIRI,
 SAMIRI, SAPAJOU
 Monster, CHIMERA, GORGON
 (Comb. form), TERATO
 Cretan, MINOTAUR
 Month: Jewish, HESHVAN, KISLEV, SHE-
 BAT, TAMMUZ, TISHRI, VEADAR
 Mountain: Asia Minor, ARARAT
 Mulct, AMERCE
 Musketeer, ARAMIS, PORTHOS
 Nearsighted, MYOPIC
 Net, TRAMMEL
 New York City, GOTHAM
 Nine: Group of, ENNEAD
 Nobleman: Spanish, GRANDEE
 Official: Roman, AEDILE
 Onyx: Mexican, TECALI
 Order: Dragonflies, ODANATA
 Insects, DIPTERA
 Organ: Plant, PISTIL
 Ornament: Shoulder, EPAULET
 Overcoat: Military, CAPOTE
 Ox: Wild, BANTENG
 Oxidation: Bronze or copper, PATINA
 Paralysis: Incomplete, PARESIS
 Pear: Alligator, AVOCADO
 Persimmon: Mexican, CHAPOTE
 Pipe: Peace, CALUMET
 Plaid (Scotch), TARTAN
 Plain, PAMPAS, STEPPE, TUNDRA
 Plant: Buttercup family, ANEMONE
 Century, MAGUEY
 On rocks, LICHEN
 Plowing: Fit for, ARABLE
 Poem: Heroic, EPOPEE
 Six-lined, SESTET
 Point: Highest, ZENITH
 Potion: Love, PHILTRE, PHILTRE
 Protozoan, AMOEBA
 Punish, AMERCE
 Purple (heraldry), PURPURE
 Queen: Fairy, TITANIA
 Race: Skiing, SLALOM
 Rat, BANDICOOT, LEMMING
 Retort, RIPOST, RIPOSTE
 Ring: Harness, TERRET
 Little, ANNULET
 Rodent: Jumping, JERBOA
 Spanish American, AGOUTI, AGOUTY
 Sailor: East Indian, LASCAR
 Salmon: Young, GRILSE
 Salutation: Eastern, SALAAM
 Sandpiper, PLOVER
 Sandy, ARENOSE
 Sapodilla, SAPOTA, SAPOTE
 Saw: Surgical, TREPAN
 Seven: Group of, HEPTAD
 Sexes: Common to both, EPICENE
 Shawl: Mexican, SERAPE
 Sheathing: Flower, SPATHE
 Sheep: Wild, AOUDAD, ARGALI
 Shipworm, TEREDO
 Shoes: Mercury's winged, TALARIA
 Shortening: Syllable, SYSTOLE
 Shrub, SPIRAEA
 Sickie-shaped, FALCATE
 Silver (heraldry), ARGENT
 Snake, ANACONDA
 Speech: Loss of, APHASIA
 Spiral, HELICAL
 Staff: Bishop's, CROSIER, CROZIER

Stalk: Plant, PETIOLE
 State: Swiss, CANTON
 Studio, ATELIER
 Swan: Young, CYGNET
 Swimming, NATANT
 Sword-shaped, ENSATE
 Terminal: Negative, CATHODE
 Third (music), TIERCE
 Thrust: Fencing, RIPOST, RIPOSTE
 Tile: Pertaining to, TEGULAR
 Tomb: Empty, CENOTAPH
 Tooth (comb. form), ODONTO
 Tower: Mohammedan, MINARET
 Tree: African timber, BAOBAB
 Black gum, TUPELO
 East Indian, MARGOSA
 Locust, ACACIA
 Malayan, SINTOC
 Marmalade, SAPOTE
 Urn: Tea, SAMOVAR
 Vehicle, LANDAU, TROIKA

Verbose, PROLIX
 Viceroy: Egyptian, KHEDIVE
 Vulture: American, CONDOR
 Warehouse (French), ENTREPOT
 Whale: White, BELUGA
 Whirlpool, VORTEX
 Will: Addition to, CODICIL
 Having left, TESTATE
 Wind, CHINOOK, MONSOON, SIMOOM,
 SIMOON, SIROCCO
 Window: In roof, DORMER
 Wine, BARBERA, BURGUNDY, CABER-
 NET, CHABLIS, CHIANTI, CLARET,
 MUSCATEL, RIESLING, SAUTERNE,
 SHERY, ZINFANDEL
 Wolfish, LUPINE
 Woman: Boisterous, TERMAGANT
 Woolly, LANATE
 Workshop, ATELIER
 Zoroastrian, PARSEE

Old-Testament Names

(We do not pretend that this list is all-inclusive. We include only those names which in our opinion one meets most often in crossword puzzles.)

AARON: First high priest of Jews; son of Amram; brother of Miriam and Moses; father of Abihu, Eleazer, Ithamar, and Nadab.

ABEL: Son of Adam; slain by Cain.

ABIGAIL: Wife of Nabal; later, wife of David.

ABIHU: Son of Aaron.

ABIMELECH: King of Gerar.

ABNER: Commander of army of Saul and Ishbosheth; slain by Joab.

ABRAHAM (or ABRAM): Patriarch; forefather of the Jews; son of Terah; husband of Sarah; father of Isaac and Ishmael.

ABSALOM: Son of David and Maacah; revolted against David; slain by Joab.

ACHISH: King of Gath; gave refuge to David.

ACHSA (or ACHSAH): Daughter of Caleb; wife of Othniel.

ADAH: Wife of Lamech.

ADAM: First man; husband of Eve; father of Cain, Abel, and Seth.

ADONIJAH: Son of David and Haggith.

AGAG: King of Amalek; spared by Saul; slain by Samuel.

AHASUERUS: King of Persia; husband of Vashti and, later, Esther; sometimes identified with Xerxes the Great.

AHIJAH: Prophet; foretold accession of Jeroboam.

AHINOAM: Wife of David.

AMASA: Commander of army of David; slain by Joab.

AMNON: Son of David and Ahinoam; ravished Tamar; slain by Absalom.

AMRAM: Husband of Jochebed; father of Aaron, Miriam and Moses.

ASENATH: Wife of Joseph.

ASHER: Son of Jacob and Zilpah.

BALAAAM: Prophet; rebuked by his donkey for cursing God.

BARAK: Jewish captain; associated with Deborah.

BARUCH: Secretary to Jeremiah.

BATHSHEBA: Wife of Uriah; later, wife of David.

BELSHAZZAR: Crown prince of Babylon.

BENAIAH: Warrior of David; proclaimed Solomon King.

BEN-HADAD: Name of several kings of Damascus.

BENJAMIN: Son of Jacob and Rachel.

BEZALEEL: Chief architect of tabernacle.

BILDAD: Comforter of Job.

BILBAH: Servant of Rachel; mistress of Jacob.

BOAZ: Husband of Ruth; father of Obed.

CAIN: Son of Adam and Eve; slayer of Abel; father of Enoch.

CAINAN: Son of Enos.

CALEB: Spy sent out by Moses to visit Canaan; father of Achsa.

CANAAN: Son of Ham.

CHILION: Son of Elimelech; husband of Orpah.

CUSH: Son of Ham; father of Nimrod.

DAN: Son of Jacob and Bilhah.

DANIEL: Prophet; saved from lions by God.

DEBORAH: Hebrew prophetess; helped Israelites conquer Canaanites.

DELILAH: Mistress and betrayer of Samson.

ELAM: Son of Shem.

ELEAZAR: Son of Aaron; succeeded him as high priest.

ELI: High priest and judge; teacher of Samuel; father of Hophni and Phinehas.

ELIAKIM: Chief minister of Hezekiah.

ELIEZER: Servant of Abraham.

ELIHU: Comforter of Job.

ELIJAH (or ELIAS): Prophet; went to heaven in chariot of fire.

ELIMELECH: Husband of Naomi; father of Chilion and Mahlon.

ELIPHAZ: Comforter of Job.

ELISHA (or ELISEUS): Prophet; successor of Elijah.

ELKANAH: Husband of Hannah; father of Samuel.

ENOCHE: Son of Cain.

ENOCH: Father of Methuselah.

ENOS: Son of Seth; father of Cainan.

EPHRAIM: Son of Joseph.

ESAU: Son of Isaac and Rebecca; sold his birthright to his brother Jacob.

ESTHER: Jewish wife of Ahasuerus; saved Jews from Haman's plotting.

EVE: First woman; created from rib of Adam.

EZRA (or ESDRAS): Hebrew scribe and priest.

GAD: Son of Jacob and Zilpah.

GEHAZI: Servant of Elisha.

GIDEON: Israelite hero; defeated Midianites.

GOLIATH: Philistine giant; slain by David.

HAGAR: Handmaid of Sarah; concubine of Abraham; mother of Ishmael.

HAGGITH: Mother of Adonijah.

HAM: Son of Noah; father of Cush, Mizraim, Phut, and Canaan.

HAMAN: Chief minister of Ahasuerus; hanged on gallows prepared for Mordecai.

HANNAH: Wife of Elkanah; mother of Samuel.

HANUN: King of Ammonites.

HARAR: Brother of Abraham; father of Lot.

HAZAEEL: King of Damascus.

HEPHZI-BAH: Wife of Hezekiah; mother of Mannaseh.

HIRAM: King of Tyre.

HOLOFERNES: General of Nebuchadnezzar; slain by Judith.

HOPNI: Son of Eli.

ISAAC: Hebrew patriarch; son of Abraham and Sarah; half brother of Ishmael; husband of Rebecca; father of Esau and Jacob.

ISHMAEL: Son of Abraham and Hagar; half brother of Isaac.

ISSACHAR: Son of Jacob and Leah.

ITHAMAR: Son of Aaron.

JABAL: Son of Lamech and Adah.

JABIN: King of Hazor.

JACOB: Hebrew patriarch, founder of Israel; son of Isaac and Rebecca; husband of Leah and Rachel; father of Asher, Benjamin, Dan, Gad, Issachar, Joseph, Judah, Levi, Naphtali, Reuben, Simeon, and Zebulun.

JAEL: Slayer of Sisera.

JAPHETH: Son of Noah.

JEHOIADA: High priest; husband of Jehoshabeath; revolted against Athaliah and made Joash King of Judah.

JEHOSHABEATH (or JEHOSHEBA): Daughter of Jehoram of Judah; wife of Jehoiada.

JEPHTHAH: Judge in Israel; sacrificed his only daughter because of vow.

JESSE: Son of Obed; father of David.

JETHRO: Midianite priest; father of Zipporah.

JEZEBEL: Phoenician princess; wife of Ahab; mother of Ahaziah, Athaliah, and Jehoram.

JOAB: Commander in chief under David; slayer of Abner, Absalom, and Amasa.

JOB: Patriarch; underwent many afflictions; comforted by Bildad, Elihu, Eliphaz and Zophar.

JOCHEBED: Wife of Amram.

JONAH: Prophet; cast into sea and swallowed by great fish.

JONATHAN: Son of Saul; friend of David.

JOSEPH: Son of Jacob and Rachel; sold into slavery by his brothers; husband of Asenath; father of Ephraim and Manassah.

JOSHUA: Successor of Moses; son of Nun.

JUBAL: Son of Lamech and Adah.

JUDAH: Son of Jacob and Leah.

JUDITH: Slayer of Holofernes.

KISH: Father of Saul.

LABAN: Father of Leah and Rachel.

LAMECH: Son of Methuselah; father of Noah.

LAMECH: Husband of Adah and Zillah; father of Jabal, Jubal, and Tubal-Cain.

LEAH: Daughter of Laban; wife of Jacob.

LEVI: Son of Jacob and Leah.

LOT: Son of Haran; escaped destruction of Sodom.

MAACAH: Mother of Absalom and Tamar.

MAHLON: Son of Elimelech; first husband of Ruth.

MANASSEH: Son of Joseph.

MELCHIZEDEK: King of Salem.

METHUSELAH: Patriarch; son of Enoch; father of Lamech.

MICHAL: Daughter of Saul; wife of David.

MIRIAM: Prophetess; daughter of Amram; sister of Aaron and Moses.

MIZRAIM: Son of Ham.

MORDECAI: Uncle of Esther; with her aid, saved Jews from Haman's plotting.

MOSES: Prophet and lawgiver; son of Amram; brother of Aaron and Miriam; husband of Zipporah.

NAAMAN: Syrian captain; cured of leprosy by Elisha.

NABAL: Husband of Abigail.

NABOTH: Owner of vineyard; stoned to death because he would not sell it to Ahab.

NADAB: Son of Aaron.

NAHOR: Father of Terah.

NAOMI: Wife of Elimelech; mother-in-law of Ruth.

NAPHTALI: Son of Jacob and Bilhah.

NATHAN: Prophet; reproved David for causing Uriah's death.

NEBUCHADNEZZAR (or **NEBUCHAD-REZZAR**): King of Babylon; destroyer of Jerusalem.

NEHEMIAH: Jewish leader; empowered by Artaxerxes to rebuild Jerusalem.

NIMROD: Mighty hunter; son of Cush.

NOAH: Patriarch; Son of Lamech; escaped Deluge by building Ark; father of Ham, Japheth and Shem.

NUN (or **NON**): Father of Joshua.

OBED: Son of Boaz; father of Jesse.

OG: King of Bashan.

ORPAH: Wife of Chilion.

OTHNIEL: Kenezite; judge of Israel; husband of Achsa.

PHINEHAS: Son of Eleazar.

PHINEHAS: Son of Eli.

PHUT (or **PUT**): Son of Ham.

POTIPHAR: Egyptian official; bought Joseph.

RACHEL: Wife of Jacob.

REBECCA (or **REBEKAH**): Wife of Isaac.

REUBEN: Son of Jacob and Leah.

RUTH: Wife of Mahlon, later of Boaz; daughter-in-law of Naomi.

SAMSON: Judge of Israel; famed for strength; betrayed by Delilah.

SAMUEL: Hebrew judge and prophet; son of Elkanah.

SARAH (or **SARA**, **SARAI**): Wife of Abraham.

SENNACHERIB: King of Assyria.

SETH: Son of Adam; father of Enos.

SHEM: Son of Noah; father of Elam.

SIMEON: Son of Jacob and Leah.

SISERA: Canaanite captain; slain by Jael.

TAMAR: Daughter of David and Maachah; ravished by Amnon.

TERAH: Son of Nahor; father of Abraham.

TUBAL-CAIN: Son of Lamech and Zillah.

URIAH: Husband of Bathsheba; sent to death in battle by David.

VASHTI: Wife of Ahasuerus; set aside by him.

ZADOK: High priest during David's reign.

ZEBULUN (or **ZABULON**): Son of Jacob and Leah.

ZILLAH: Wife of Lamech.

ZILPAH: Servant of Leah; mistress of Jacob.

ZIPPORAH: Daughter of Jethro; wife of Moses.

ZOPHAR: Comforter of Job.

Kings of Judah and Israel

Kings Before Division of Kingdom

SAUL: First King of Israel; son of Kish; father of Ish-Bosheth, Jonathan and Michal.

ISH-BOSHETH (or **ESHBAAL**): King of Israel; son of Saul.

DAVID: King of Judah; later of Israel; son of Jesse; husband of Abigail, Ahinoam, Bathsheba, Michal, etc.; father of Absalom, Adonijah, Amnon, Solomon, Tamar, etc.

SOLOMON: King of Israel and Judah; son of David; father of Rehoboam.

REHOBAM: Son of Solomon; during his reign the kingdom was divided into Judah and Israel.

Kings of Judah (Southern Kingdom)

REHOBAM: First King.

ABIJAH (or **ABIJAM** or **ABIA**): Son of Rehoboam.

ASA: Probably son of Abijah.

JEHOSHAPHAT: Son of Asa.

JEHORAM (or **JORAM**): Son of Jehoshaphat; husband of Athaliah.

AHAZIAH: Son of Jehoram and Athaliah.

ATHALIAH: Daughter of King Ahab of Israel and Jezebel; wife of Jehoram.

JOASH (or **JEHOASH**): Son of Ahaziah.

AMAZIAH: Son of Joash.

UZZIAH (or **AZARIAH**): Son of Amaziah.

JOTHAM: Regent, later King; son of Uzziah.

AHAZ: Son of Jotham.

HEZEKIAH: Son of Ahaz; husband of Hephzi-Bah.

MANASSEH: Son of Hezekiah and Hephzi-Bah.

AMON: Son of Manasseh.

JOSIAH (or **JOSIAS**): Son of Amon.

JEHOAHAZ (or **JOAHAZ**): Son of Josiah.

JEHOIAKIM: Son of Josiah.

JEHOIACHIN: Son of Jehoiakim.

ZEDEKIAH: Son of Josiah; kingdom overthrown by Babylonians under Nebuchadnezzar.

Kings of Israel (Northern Kingdom)

JEEROAM I: Led secession of Israel.

NADAB: Son of Jeroboam I.

BAASHA: Overthrew Nadab.

ELAH: Son of Baasha.

ZIMRI: Overthrew Elah.

OMRI: Overthrew Zimri.

AHAB: Son of Omri; husband of Jezebel.

AHAZIAH: Son of Ahab.

JEHORAM (or **JORAM**): Son of Ahab.

JEHU: Overthrew Jehoram.

JEHOAHAZ (or **JOAHAZ**): Son of Jehu.

JEHOASH (or **JOASH**): Son of Jehoahaz.

JEROBOAM II: Son of Jehoash.
 ZECHARIAH: Son of Jeroboam II.
 SHALLUM: Overthrew Zechariah.
 MENAHEM: Overthrew Shallum.

PEKAHIAH: Son of Menahem.
 PEKAH: Overthrew Pekahiah.
 HOSHEA: Overthrew Pekah; kingdom
 overthrown by Assyrians under Sargon II.

Prophets

Major			
ISAIAH	JEREMIAH	EZEKIEL	DANIEL
Minor			
HOSEA	OBADIAH	NAHUM	HAGGAI
JOEL	JONAH	HABAKKUK	ZECHARIAH
AMOS	MICAH	ZEPHANIAH	MALACHI

Foreign Phrases

(NOTE: The English meanings given are not necessarily literal translations.)

AB OVO: From the beginning.
 ABSIT OMEN: Hope this is no bad luck.
 AEQUO ANIMO: Undisturbed in mind.
 AD VALOREM: According to its value.
 ALEA JACTA EST: The die is cast.
 ALMA MATER: One's college or school.
 ALTER EGO: Other self.
 AMICUS CURIAE: Friend of the court.
 ANNO DOMINI: Year of our Lord.
 BEL CANTO: A style of singing marked
 by virtuosity and beauty.

BETE NOIRE: Particular nemesis.
 BONA FIDE: In good faith; genuine.
 CARPE DIEM: Enjoy today.
 CASUS BELLI: Cause of war.
 CAVEAT EMPTOR: Buy at your own
 risk.

CORPUS DELICTI: Fundamental fact or
 facts necessary to commission of a crime.
 CUI BONO: To whose advantage?
 CUM GRANO SALIS: With a grain of
 salt.

DE FACTO: As a matter of fact; because
 of this fact.

DEO GRATIAS: Thanks be to God.
 DEUS EX MACHINA: Artificially pro-
 duced to bring a solution of some extreme
 difficulty.

ECCE HOMO: This is the man.
 ERRARE HUMANUM (EST): To err is
 human.

FESTINALENTE: Make haste slowly.
 FIAT LUX: Let there be light.
 FIDUS ACHATES: Faithful friend.
 FLAGRANTE DELICTO: Caught in the
 act.

HABEAS CORPUS: Common-law writ to
 bring a person before a court or judge.

HIC JACET: Here lies. . . .

HOI POLLOI: The common people.

HONORIS CAUSA: For the sake of
 honor.

HORS D'OEUVRES: Appetizers.
 IN VINO VERITAS: In wine there is
 truth.

IPSE DIXIT: An assertion made but not
 proved.

IPSO FACTO: By the very fact.
 JEUNESSE DOREE: Gilded youth.
 LABOR OMNIA VINCIT: Work over-
 comes all things.

LAI SSEZ FAIRE: Noninterference.
 MIRABILE DICTU: Wonderful to relate.
 MULTUM IN PARVO: Much in little.
 NIL ADMIRARI: To be astonished at
 nothing.

NOLENS, VOLENS: Willy-nilly.
 O TEMPORA! O MORES!: What sad
 times and customs!

PERSONA GRATA: A favored person.
 POST MORTEM: After death.
 PRO BONO PUBLICO: For the public
 welfare.

PRO TEMPORE: For the time being.
 RARA AVIS: Extraordinary person or
 thing.

REQUIESCAT IN PACE: Rest in peace.
 SAVOIR FAIRE: Know-how; manners
 for all occasions.

SINE DIE: With no day set for the next
 meeting.

SINE QUA NON: Indispensable.
 SPIRITUS FRUMENTI: Alcohol.
 STATUS (IN) QUO: State in which any-
 thing is.

SUI GENERIS: In a class by itself.
 SURSUM CORDA: Lift up your hearts.
 TEMPUS FUGIT: Time flies.
 ULTIMA THULE: The limit in an ideal
 way.

VAE VICTIS: Woe to the conquered.
 VENI, VIDI, VICI: I came, I saw, I
 conquered.

Greek and Roman Mythology

(Most of the Greek deities were adopted by the Romans, although in many cases there was a change of name. In the list below, information is given under the Greek name; the name in parentheses is the Latin equivalent. However, all Latin names are listed with cross references to the Greek ones. In addition, there are several deities which were exclusively Roman.)

- ACHERON:** *See* Rivers.
- ACHILLES:** Greek warrior; slew Hector at Troy; slain by Paris, who wounded him in his vulnerable heel.
- ACTAEON:** Hunter; surprised Artemis bathing; changed by her to stag and killed by his dogs.
- ADMETUS:** King of Thessaly; his wife, Alcestis, offered to die in his place.
- ADONIS:** Beautiful youth loved by Aphrodite.
- AEACUS:** One of three judges of dead in Hades; son of Zeus.
- AETTES:** King of Colchis; father of Medea; keeper of Golden Fleece.
- AEGEUS:** Father of Theseus; believing Theseus killed in Crete, he drowned himself, Aegean Sea named for him.
- AEGISTHUS:** Son of Thyestes; slew Atreus; with Clytemnestra, his paramour, slew Agamemnon; slain by Orestes.
- AEGYPTUS:** Brother of Danaüs; his sons, except Lynceus, slain by Danaides.
- AENEAS:** Trojan; son of Anchises and Aphrodite; after fall of Troy, led his followers eventually to Italy; loved and deserted Dido.
- AEOLUS:** *See* Winds.
- AESCLAPIUS:** *See* Asclepius.
- AESON:** King of Iolus; father of Jason; overthrown by his brother Pelias; restored to youth by Medea.
- AETHER:** Personification of sky.
- AETHRA:** Mother of Theseus.
- AGAMEMNON:** King of Mycenae; son of Atreus; brother of Menelaus; leader of Greeks against Troy; slain on his return home by Clytemnestra and Aegisthus.
- AGLAIA:** *See* Graces.
- AJAX:** Greek warrior; killed himself at Troy because Achilles' armor was awarded to Odysseus.
- ALCESTIS:** Wife of Admetus; offered to die in his place but saved from death by Hercules.
- ALCMENE:** Wife of Amphitryon; mother by Zeus of Hercules.
- ALCYONE:** *See* Pleiades.
- ALECTO:** *See* Furies.
- ALECTRYON:** Youth changed by Ares into cock.
- ALTHAEA:** Wife of Oeneus; mother of Meleager.
- AMAZONS:** Female warriors in Asia Minor; supported Troy against Greeks.
- AMOR:** *See* Eros.
- AMPHION:** Musician; husband of Niobe; charmed stones to build fortifications for Thebes.
- AMPHITRITE:** Sea goddess; wife of Poseidon.
- AMPHITRYON:** Husband of Alcmene.
- ANCHISES:** Father of Aeneas.
- ANCILE:** Sacred shield that fell from heavens; palladium of Rome.
- ANDRAEMON:** Husband of Dryope.
- ANDROMACHE:** Wife of Hector.
- ANDROMEDA:** Daughter of Cepheus; chained to cliff for monster to devour; rescued by Perseus.
- ANTEIA:** Wife of Proetus; tried to induce Bellerophon to elope with her.
- ANTEROS:** God who avenged unrequited love.
- ANTIGONE:** Daughter of Oedipus; accompanied him to Colonus; performed burial rite for Polynices and was buried alive.
- ANTINOÜS:** Leader of suitors of Penelope; slain by Odysseus.
- APHRODITE (VENUS):** Goddess of love and beauty; daughter of Zeus; mother of Eros.
- APOLLO:** God of beauty, poetry, music; later identified with Helios as Phoebus Apollo; son of Zeus and Leto.
- AQUILUS:** *See* Winds.
- ARACHNE:** Maiden who challenged Athena to weaving contest; changed to spider.
- ARES (MARS):** God of war; son of Zeus and Hera.
- ARGO:** Ship in which Jason and followers sailed to Colchis for Golden Fleece.
- ARGUS:** Monster with hundred eyes; slain by Hermes; his eyes placed by Hera into peacock's tail.
- ARIADNE:** Daughter of Minos; aided Theseus in slaying Minotaur; deserted by him on island of Naxos and married to Dionysus.
- ARION:** Musician; thrown overboard by pirates but saved by dolphin.
- ARTEMIS (DIANA):** Goddess of moon; huntress; twin sister of Apollo.
- ASCLEPIUS (AESCLAPIUS):** Mortal son of Apollo; slain by Zeus for raising dead; later deified as god of medicine. Also known as Asklepios.
- ASTARTE:** Phoenician goddess of love; variously identified with Aphrodite, Selene, and Artemis.

ASTRAEA: Goddess of Justice; daughter of Zeus and Themis.

ATALANTA: Princess who challenged her suitors to a foot race; Hippomenes won race and married her.

ATHENA (MINERVA): Goddess of wisdom; known poetically as Pallas Athene; sprang fully armed from head of Zeus.

ATLAS: Titan; held world on his shoulders as punishment for warring against Zeus; son of Iapetus.

ATREUS: King of Mycenae; father of Menelaus and Agamemnon; brother of Thyestes, three of whose sons he slew and served to him at banquet; slain by Aegisthus.

ATROPOS: *See* Fates.

AURORA: *See* Eos.

AUSTER: *See* Winds.

AVERNUS: Infernal regions; name derived from small vaporous lake near Vesuvius which was fabled to kill birds and vegetation.

BACCHUS: *See* Dionysus.

BELLEROPHON: Corinthian hero; killed Chimera with aid of Pegasus; tried to reach Olympus on Pegasus and was thrown to his death.

BELLONA: Roman goddess of war.

BOREAS: *See* Winds.

BRIAREUS: Monster of hundred hands; son of Uranus and Gaea.

BRISEIS: Captive maiden given to Achilles; taken by Agamemnon in exchange for loss of Chryseis, which caused Achilles to cease fighting, until death of Patroclus.

CADMUS: Brother of Europa; planter of dragon seeds from which first Thebans sprang.

CALLIOPE: *See* Muses.

CALYPSO: Sea nymph; kept Odysseus on her island Ogygia for seven years.

CASSANDRA: Daughter of Priam; prophetess who was never believed; slain with Agamemnon.

CASTOR: *See* Dioscuri.

CELAENO: *See* Pleiades.

CENTAURS: Beings half man and half horse; lived in mountains of Thessaly.

CEPHALUS: Hunter; accidentally killed his wife Procris with his spear.

CEPHEUS: King of Ethiopia; father of Andromeda.

CERBERUS: Three-headed dog guarding entrance to Hades.

CERES: *See* Demeter.

CHAOS: Formless void; personified as first of gods.

CHARON: Boatman on Styx who carried souls of dead to Hades; son of Erebus.

CHARYBDIS: Female monster; personification of whirlpool.

CHIMERA: Female monster with head of lion, body of goat, tail of serpent; killed by Bellerophon.

CHIRON: Most famous of centaurs.

CHRONOS: Personification of time.

CHRYSEIS: Captive maiden given to Agamemnon; his refusal to accept ransom from her father Chryses caused Apollo to send plague on Greeks besieging Troy.

CIRCE: Sorceress; daughter of Helios; changed Odysseus' men into swine.

CLIO: *See* Muses.

CLOTHO: *See* Fates.

CLYTEMNESTRA: Wife of Agamemnon, whom she slew with aid of her paramour, Aegisthus; slain by her son Orestes.

COCYTUS: *See* Rivers.

CREON: Father of Jocasta; forbade burial of Polynices; ordered burial alive of Antigone.

CREÜSA: Princess of Corinth, for whom Jason deserted Medea; slain by Medea, who sent her poisoned robe; also known as Glauke.

CREÜSA: Wife of Aeneas; died fleeing Troy.

CRONUS (SATURN): Titan; god of harvests; son of Uranus and Gaea; dethroned by his son Zeus.

CUPID: *See* Eros.

CYBELE: Anatolian nature goddess; adopted by Greeks and identified with Rhea.

CYCLOPES: Race of one-eyed giants (singular: Cyclops).

DAEDALUS: Athenian artificer; father of Icarus; builder of Labyrinth in Crete; devised wings attached with wax for him and Icarus to escape Crete.

DANAË: Princess of Argos; mother of Perseus by Zeus, who appeared to her in form of golden shower.

DANAIDES: Daughters of Danaüs; at his command, all except Hypermnestra slew their husbands, the sons of Aegyptus.

DANAÜS: Brother of Aegyptus; father of Danaides; slain by Lynceus.

DAPHNE: Nymph; pursued by Apollo; changed to laurel tree.

DECUMA: *See* Fates.

DEINO: *See* Graeae.

DEMETER (CERES): Goddess of agriculture; mother of Persephone.

DIANA: *See* Artemis.

DIDO: Founder and queen of Carthage; stabbed herself when deserted by Aeneas.

DIOMEDES: Greek hero; with Odysseus, entered Troy and carried off Palladium, sacred statue of Athena.

DIOMEDES: Owner of man-eating horses, which Hercules, as ninth labor, carried off.

DIONE: Titan goddess; mother by Zeus of Aphrodite.

DIONYSUS (BACCHUS): God of wine; son of Zeus and Semele.

DIOSCURI: Twins Castor and Pollux; sons of Leda by Zeus.

DIS: See Hades.

DRYADS: Wood nymphs.

DRYOPE: Maiden changed to Hamadryad.

ECHO: Nymph who fell hopelessly in love with Narcissus; faded away except for her voice.

ELECTRA: Daughter of Agamemnon and Clytemnestra; sister of Orestes; urged Orestes to slay Clytemnestra and Aegisthus.

ELECTRA: See Pleiades.

ELYSIUM: Abode of blessed dead.

ENDYMION: Mortal loved by Selene.

ENYO: See Graeae.

EOS (AURORA): Goddess of dawn.

EPIMETHEUS: Brother of Prometheus; husband of Pandora.

ERATO: See Muses.

EREBUS: Spirit of darkness; son of Chaos.

ERINYES: See Furies.

ERIS: Goddess of discord.

EROS (AMOR or CUPID): God of love; son of Aphrodite.

ETEOCLES: Son of Oedipus, whom he succeeded to rule alternately with Polyneices; refused to give up throne at end of year; he and Polyneices slew each other.

EUMENIDES: See Furies.

EUPHROSYNE: See Graces.

EUROPA: Mortal loved by Zeus, who, in form of white bull, carried her off to Crete.

EURUS: See Winds.

EURYALE: See Gorgons.

EURYDICE: Nymph; wife of Orpheus.

EURYSTHEUS: King of Argos; imposed twelve labors on Hercules.

EUTERPE: See Muses.

FATES: Goddesses of destiny: Clotho (Spinner of thread of life), Lachesis (Determiner of length), and Atropos (Cutter of thread); also called Moirae. Identified by Romans with their goddesses of fate; Nona, Decuma, and Morta; called Parcae.

FAUNS: Roman deities of woods and groves.

FAUNUS: See Pan.

FAVONIUS: See Winds.

FLORA: Roman goddess of flowers.

FORTUNA: Roman goddess of fortune.

FURIES: Avenging spirits: Alecto, Megaera, and Tisiphone; known also as Erinyes or Eumenides.

GAEA: Goddess of earth; daughter of Chaos; mother of Titans; known also as Ge, Gaia, Gaia, etc.

GALATEA: Statue of maiden carved from ivory by Pygmalion; given life by Aphrodite.

GALATEA: Sea nymph; loved by Polyphemus.

GANYMEDE: Beautiful boy; successor to Hebe as cupbearer of gods.

GLAUCUS: Mortal who became sea divinity by eating magic grass.

GLAUKE: See Creüsa.

GOLDEN FLEECE: Fleece from ram that flew Phrixos to Colchis; Aeëtes placed it under guard of dragon; carried off by Jason.

GORGONS: Female monsters: Euryale, Medusa, and Stheno; had snakes for hair; their glances turned mortals to stone. See Medusa.

GRACES: Beautiful goddesses: Aglala (Brilliance), Euphrosyne (Joy), and Thalia (Bloom); daughters of Zeus.

GRAEAE: Sentinels for Gorgons: Deino, Enyo, and Pephredo; had one eye among them, which passed from one to another.

HADES (DIS): Name sometimes given Pluto; also, abode of dead, ruled by Pluto.

HAEMON: Son of Creon; promised husband of Antigone; killed himself in her tomb.

HAMADRYADS: Tree nymphs; lived and died with trees they inhabited.

HARPIES: Monsters with heads of women and bodies of birds.

HEBE (JUVENTAS): Goddess of youth; cupbearer of gods before Ganymede; daughter of Zeus and Hera.

HECATE: Goddess of sorcery and witchcraft.

HECTOR: Son of Priam; slayer of Patroclus; slain by Achilles.

HECUBA: Wife of Priam.

HELEN: Fairest woman in world; daughter of Zeus and Leda; wife of Menelaus; carried to Troy by Paris, causing Trojan War.

HELIADES: Daughters of Helios; mourned for Phaëthon and were changed to poplar trees.

HELIOS (SOL): God of sun; later identified with Phoebus Apollo.

HELLE: Sister of Phrixos; fell from ram of Golden Fleece; water where she fell named Hellespont.

HEPHAESTUS (VULCAN): God of fire; celestial blacksmith; son of Zeus and Hera; husband of Aphrodite.

HERA (JUNO): Queen of heaven; wife of Zeus.

HERCULES: Hero and strong man; son of Zeus and Alcmena; performed twelve

labors or deeds to be free from bondage under Eurystheus; after death, his mortal share was destroyed, and he became immortal. Also known as Herakles or Hercules. Labors: (1) killing Nemean lion; (2) killing Lernaean Hydra; (3) capturing Erymanthian boar; (4) capturing Cerynean hind; (5) killing man-eating Stymphalian birds; (6) procuring girdle of Hippolyte; (7) cleaning Augean stables; (8) capturing Cretan bull; (9) capturing man-eating horses of Diomedes; (10) capturing cattle of Geryon; (11) procuring golden apples of Hesperides; (12) bringing Cerberus up from Hades.

HERMES (MERCURY): God of physicians and thieves; messenger of gods; son of Zeus and Maia.

HERO: Priestess of Aphrodite; Leander swam Hellespont nightly to see her; drowned herself at his death.

HESPERUS: Evening star.

HESTIA (VESTA): Goddess of hearth; sister of Zeus.

HIPPOLYTE: Queen of Amazons; wife of Theseus.

HIPPOLYTUS: Son of Theseus and Hippolyte; falsely accused by Phaedra of trying to kidnap her; slain by Poseidon at request of Theseus.

HIPPOMENES: Husband of Atalanta, whom he beat in foot race by dropping golden apples, which she stopped to pick up.

HYACINTHUS: Beautiful youth accidentally killed by Apollo, who caused flower to spring up from his blood.

HYDRA: Nine-headed monster in marsh of Lerna; slain by Hercules.

HYGEIA: Personification of health.

HYMEN: God of marriage.

HYPERION: Titan; early sun god; father of Helios.

HYPERMNESTRA: Daughter of Danaüs; refused to kill her husband Lynceus.

HYPNOS (SOMNUS): God of sleep.

IAPETUS: Titan; father of Atlas, Epimetheus, and Prometheus.

ICARUS: Son of Daedalus; flew too near sun with wax-attached wings and fell into sea and was drowned.

IO: Mortal maiden loved by Zeus; changed by Hera into heifer.

IOBATES: King of Lycia; sent Bellerophon to slay Chimera.

IPHIGENIA: Daughter of Agamemnon; offered as sacrifice to Artemis at Aulis; carried by Artemis to Tauris where she became priestess; escaped from there with Orestes.

IRIS: Goddess of rainbow; messenger of Zeus and Hera.

ISMENE: Daughter of Oedipus; sister of Antigone.

IULUS: Son of Aeneas.

IXION: King of Lapithae; for making love to Hera he was bound to endlessly revolving wheel in Tartarus.

JANUS: Roman god of gates and doors; represented with two opposite faces.

JASON: Son of Aeson; to gain throne of Iolus from Pelias, went to Colchis and brought back Golden Fleece; married Medea; deserted her for Creüsa.

JOCASTA: Wife of Laius; mother of Oedipus; unwittingly became wife of Oedipus; hanged herself when relationship was discovered.

JUNO: See Hera.

JUPITER: See Zeus.

JUVENTAS: See Hebe.

LACHESIS: See Fates.

LAIUS: Father of Oedipus, by whom he was slain.

LAOCOÖN: Priest of Apollo at Troy; warned against bringing wooden horse into Troy; destroyed with his two sons by serpents sent by Athena.

LARES: Roman ancestral spirits protecting descendants and homes.

LAVINIA: wife of Aeneas after defeat of Turnus.

LEANDER: Swam Hellespont nightly to see Hero; drowned in storm.

LEDA: Mortal loved by Zeus in form of Swan; mother of Helen, Clytemnestra, Dioscuri.

LETHE: See Rivers.

LETO (LATONA): Mother by Zeus of Artemis and Apollo.

LUCINA: Roman goddess of childbirth; identified with Juno.

LYNCEUS: Son of Aegyptus; husband of Hypermnestra; slew Danaüs.

MAIA: Daughter of Atlas; mother of Hermes.

MAIA: See Pleiades.

MANES: Souls of dead Romans, particularly of ancestors.

MARS: See Ares.

MARSYAS: Shepherd; challenged Apollo to music contest and lost; flayed alive by Apollo.

MEDEA: Sorceress; daughter of Aeëtes; helped Jason obtain Golden Fleece; when deserted by him for Creüsa, killed her children and Creüsa.

MEDUSA: Gorgon; slain by Perseus, who cut off her head.

MEGAERA: See Furies.

MELEAGER: Son of Althaea; his life would last as long as brand burning at his birth; Althaea quenched and saved it but destroyed it when Meleager slew his uncles.

MELPOMENE: See Muses.

MEMNON: Ethiopian king; made immortal by Zeus; son of Tithonus and Eos.

MENELAUS: King of Sparta; son of Atreus; brother of Agamemnon; husband of Helen.

MERCURY: *See* Hermes.

MEROPE: *See* Pleiades.

MEZENTIUS: Cruel Etruscan king; ally of Turnus against Aeneas; slain by Aeneas.

MIDAS: King of Phrygia; given gift of turning to gold all he touched.

MINERVA: *See* Athena.

MINOS: King of Crete; after death, one of three judges of dead in Hades; son of Zeus and Europa.

MINOTAUR: Monster, half man and half beast, kept in Labyrinth in Crete; slain by Theseus.

MNEMOSYNE: Goddess of memory; mother by Zeus of Muses.

MOIRAE: *See* Fates.

MOMUS: God of ridicule.

MORPHEUS: God of dreams.

MORS: *See* Thanatos.

MORTA: *See* Fates.

MUSES: Goddesses presiding over arts and sciences: Calliope (epic poetry), Clio (history), Erato (lyric and love poetry), Euterpe (music), Melpomene (tragedy), Polymania or Polyhymnia (sacred poetry), Terpsichore (choral dance and song), Thalia (comedy and bucolic poetry), Urania (astronomy); daughters of Zeus and Mnemosyne.

NAIADS: Nymphs of waters, streams, and fountains.

NAPAEAE: Wood nymphs.

NARCISSUS: Beautiful youth loved by Echo; in punishment for not returning her love, he was made to fall in love with his image reflected in pool; pined away and became flower.

NEMESIS: Goddess of retribution.

NEOPTOLEMUS: Son of Achilles; slew Priam; also known as Pyrrhus.

NEPTUNE: *See* Poseidon.

NEREIDS: Sea nymphs; attendants on Poseidon.

NESTOR: King of Pylos; noted for wise counsel in expedition against Troy.

NIKE: Goddess of victory.

NIOBE: Daughter of Tantalus; wife of Amphion; her children slain by Apollo and Artemis; changed to stone but continued to weep her loss.

NONA: *See* Fates.

NOTUS: *See* Winds.

NOX: *See* Nyx.

NYMPHS: Beautiful maidens; inferior deities of nature.

NYX (NOX): Goddess of night.

OCEANIDS: Ocean nymphs; daughters of Oceanus.

OCEANUS: Eldest of Titans; god of waters.

ODYSSEUS (ULYSSES): King of Ithaca; husband of Penelope; wandered ten years after fall of Troy before arriving home.

OEDIPUS: King of Thebes; son of Laius and Jocasta; unwittingly murdered Laius and married Jocasta; tore his eyes out when relationship was discovered.

OENONE: Nymph of Mount Ida; wife of Paris, who abandoned her; refused to cure him when he was poisoned by arrow of Philoctetes at Troy.

OPS: *See* Rhea.

OREADS: Mountain nymphs.

ORESTES: Son of Agamemnon and Clytemnestra; brother of Electra; slew Clytemnestra and Aegisthus; pursued by Furies until his purification by Apollo.

ORION: Hunter; slain by Artemis and made heavenly constellation.

ORPHEUS: Famed musician; son of Apollo and Muse Calliope; husband of Eurydice.

PALES: Roman goddess of shepherds and herdsmen.

PALINURUS: Aeneas' pilot; fell overboard in his sleep and was drowned.

PAN (FAUNUS): God of woods and fields; part goat; son of Hermes.

PANDORA: Opener of box containing human ills; mortal wife of Epimetheus.

PARCAE: *See* Fates.

PARIS: Son of Priam; gave apple of discord to Aphrodite, for which she enabled him to carry off Helen; slew Achilles at Troy; slain by Philoctetes.

PATROCLUS: Great friend of Achilles; wore Achilles' armor and was slain by Hector.

PEGASUS: Winged horse that sprang from Medusa's body at her death; ridden by Bellerophon when he slew Chimera.

PELIAS: King of Iolcus; seized throne from his brother Aeson; sent Jason for Golden Fleece; slain unwittingly by his daughters at instigation of Medea.

PELOPS: Son of Tantalus; his father cooked and served him to gods; restored to life; Peloponnesus named for him.

PENATES: Roman household gods.

PENELOPE: Wife of Odysseus; waited faithfully for him for ten years while putting off numerous suitors.

PEPHREDO: *See* Graeae.

PERIPHETES: Giant; son of Hephaestus; slain by Theseus.

PERSEPHONE (PROSERPINE): Queen of infernal regions; daughter of Zeus and Demeter; wife of Pluto.

PERSEUS: Son of Zeus and Danaë; slew Medusa; rescued Andromeda from monster and married her.

PHAEDRA: Daughter of Minos; wife of Theseus; falsely accused Hippolytus of trying to kidnap her.

PHAETHON: Son of Helios; drove his father's sun chariot and was struck down by Zeus before he set world on fire.

PHILOCTETES: Greek warrior who possessed Hercules' bow and arrows; slew Paris at Troy with poisoned arrow.

PHINEUS: Betrothed of Andromeda; tried to slay Perseus but turned to stone by Medusa's head.

PHLEGETHON: *See* Rivers.

PHOSPHOR: Morning star.

PHRIXOS: Brother of Helle; carried by ram of Golden Fleece to Colchis.

PIRITHOÜS: Son of Ixion; friend of Theseus; tried to carry off Persephone from Hades; bound to enchanted rock by Pluto.

PLEIADES: Alcyone, Celaeno, Electra, Maia, Merope, Sterope or Asterope, Taygeta; seven daughters of Atlas; transformed into heavenly constellation, of which six stars are visible (Merope is said to have hidden in shame for loving a mortal).

PLUTO (DIS): God of Hades; brother of Zeus.

PLUTUS: God of wealth.

POLLUX: *See* Dioscuri.

POLYMNIA: *See* Muses.

POLYNICES: Son of Oedipus; he and his brother Eteocles killed each other; burial rite, forbidden by Creon, performed by his sister Antigone.

POLYPHEMUS: Cyclops; devoured six of Odysseus' men; blinded by Odysseus.

POLYXENA: Daughter of Priam; betrothed to Achilles, whom Paris slew at their betrothal; sacrificed to shade of Achilles.

POMONA: Roman goddess of fruits.

PONTUS: Sea god; son of Gaea.

POSEIDON (NEPTUNE): God of sea; brother of Zeus.

PRIAM: King of Troy; husband of Hecuba; ransomed Hector's body from Achilles; slain by Neoptolemus.

PRIAPUS: God of regeneration.

PROCRIS: Wife of Cephalus, who accidentally slew her.

PROCRUSTES: Giant; stretched or cut off legs of victims to make them fit iron bed; slain by Theseus.

PROETUS: Husband of Antela; sent Belerophon to Iobates to be put to death.

PROTEUS: Sea god; assumed various shapes when called on to prophesy.

PSYCHE: Beloved of Eros; punished by jealous Aphrodite; made immortal and united with Eros.

PYGMALION: King of Cyprus; carved ivory statue of maiden which Aphrodite gave life as Galatea.

PYRAMUS: Babylonian youth; made love to Thisbe through hole in wall; thinking Thisbe slain by lion, killed himself.

PYRRHUS: *See* Neoptolemus.

PYTHON: Serpent born from slime left by Deluge; slain by Apollo.

QUIRINUS: Roman war god.

REMUS: Brother of Romulus; slain by him.

RHADAMANTHUS: One of three judges of dead in Hades; son of Zeus and Europa.

RHEA (OPS): Daughter of Uranus and Gaea; wife of Cronus; mother of Zeus; identified with Cybele.

RIVERS OF UNDERWORLD: Acheron (woe), Cocytus (wailing), Lethe (forgetfulness), Phlegethon (fire), Styx (across which souls of dead were ferried by Charon).

ROMULUS: Founder of Rome; he and Remus suckled in infancy by she-wolf; slew Remus; deified by Romans.

SARPEDON: King of Lycia; son of Zeus and Europa; slain by Patroclus at Troy.

SATURN: *See* Cronus.

SATYRS: Hoofed demigods of woods and fields; companions of Dionysus.

SCIRON: Robber; forced strangers to wash his feet, then hurled them into sea where tortoise devoured them; slain by Theseus.

SCYLLA: Female monster inhabiting rock opposite Charybdis; menaced passing sailors.

SELENE: Goddess of moon.

SEMELE: Daughter of Cadmus; mother by Zeus of Dionysus; demanded Zeus appear before her in all his splendor and was destroyed by his lightnings.

SIBYLS: Various prophetesses; most famous, Cumaean sibyl, accompanied Aeneas into Hades.

SILENI: Minor woodland deities similar to satyrs (singular: silenus). Sometimes Silenus refers to eldest of satyrs, son of Hermes or of Pan.

SILVANUS: Roman god of woods and fields.

SINIS: Giant; bent pines, by which he hurled victims against side of mountain; slain by Theseus.

SIRENS: Minor deities who lured sailors to destruction with their singing.

SISYPHUS: King of Corinth; condemned in Tartarus to roll huge stone to top of hill; it always rolled back down again.

SOL: *See* Helios.

SOMNUS: *See* Hypnos.

SPHINX: Monster of Thebes; killed those who could not answer her riddle*; slain by Oedipus. Name also refers to other monsters having body of lion, wings, and head and bust of woman.

STEROPE: *See* Pleiades.

STHENO: *See* Gorgons.

STYX: *See* Rivers.

*What animal goes on 4 feet in morning, 2 at noon, 3 at night? Answer: Man (crawls when child, walks when adult, uses staff when old).

SYMPLEGADES: Clashing rocks at entrance to Black Sea; Argo passed through, causing them to become forever fixed.

SYRINX: Nymph pursued by Pan; changed to reeds, from which he made his pipes.

TANTALUS: Cruel king; father of Pelops and Niobe; condemned in Tartarus to stand chin-deep in lake surrounded by fruit branches; as he tried to eat or drink, water or fruit always receded.

TARTARUS: Underworld below Hades; often refers to Hades.

TAYGETA: See Pleiades.

TELEMACHUS: Son of Odysseus; made unsuccessful journey to find his father.

TELLUS: Roman goddess of earth.

TERMINUS: Roman god of boundaries and landmarks.

TERPSICHORE: See Muses.

TERRA: Roman earth goddess.

THALIA: See Graces; Muses.

THANATOS (MORS): God of death.

THEMIS: Titan goddess of laws of physical phenomena; daughter of Uranus; mother of Prometheus.

THESEUS: Son of Aegeus; slew Minotaur; married and deserted Ariadne; later married Phaedra.

THISBE: Beloved of Pyramus; killed herself at his death.

Norse Mythology

AESIR: Chief gods of Asgard.

ANDVARI: Dwarf; robbed of gold and magic ring by Loki.

ANGERBOTH (Angrbotha): Giantess; mother by Loki of Fenrir, Hel, and Midgard serpent.

ASGARD (Asgarth): Abode of gods.

ASK (Aske, Ask): First man; created by Odin, Hoenir, and Lothur.

ASYNJUR: Goddesses of Asgard.

ATLI: Second husband of Gudrun; invited Gunnar and Hogni to his court, where they were slain; slain by Gudrun.

AUDHUMLA (Audhumbla): Cow that nourished Ymir; created Buri by licking ice cliff.

BALDER (Baldr, Baldur): God of light, spring, peace, joy; son of Odin; slain by Hoth at instigation of Loki.

BIFROST: Rainbow bridge connecting Midgard and Asgard.

BRAGI (Brage): God of poetry; husband of Ithunn.

BRANSTOCK: Great oak in hall of Volungs; into it, Odin thrust Gram, which only Sigmund could draw forth.

BRYNHILD: Valkyrie; wakened from magic sleep by Sigurd; married Gunnar;

THYESTES: Brother of Atreus; Atreus killed three of his sons and served them to him at banquet.

TIRESIAS: Blind soothsayer of Thebes.

TISIPHONE: See Furies.

TITANS: Early gods from which Olympian gods were derived; children of Uranus and Gaea.

TITHONUS: Mortal loved by Eos; changed into grasshopper.

TRITON: Demigod of sea; son of Poseidon.

TURNUS: King of Rutuli in Italy; betrothed to Lavinia; slain by Aeneas.

ULYSSES: See Odysseus.

URANIA: See Muses.

URANUS: Personification of Heaven; husband of Gaea; father of Titans; dethroned by his son Cronus.

VENUS: See Aphrodite.

VERTUMNUS: Roman god of fruits and vegetables; husband of Pomona.

VESTA: See Hestia.

VULCAN: See Hephaestus.

WINDS: Aeolus (keeper of winds), Boreas (Aquilo) (north wind), Eurus (east wind), Notus (Auster) (south wind), Zephyrus (Favonius) (west wind).

ZEPHYRUS: See Winds.

ZEUS (JUPITER): Chief of Olympian gods; son of Cronus and Rhea; husband of Hera.

instigated death of Sigurd; killed herself and was burned on pyre beside Sigurd.

BUR (Bor): Son of Buri; father of Odin, Hoenir, and Lothur.

BURI (Borl): Progenitor of gods; father of Bur; created by Audhumla.

EMBLA: First woman; created by Odin, Hoenir, and Lothur.

FAFNIR: Son of Rodmar, whom he slew for gold in Otter's skin; in form of dragon, guarded gold; slain by Sigurd.

FENRIR: Wolf; offspring of Loki; swallows Odin at Ragnarok and is slain by Vitharr.

FORSETI: Son of Balder.

FREY (Freyr): God of fertility and crops; son of Njorth; originally one of Vanir.

FREYA (Freyja): Goddess of love and beauty; sister of Frey; originally one of Vanir.

FRIGG (Frigga): Goddess of sky; wife of Odin.

GARM: Watchdog of Hel; slays, and is slain by, Tyr at Ragnarok.

GIMLE: Home of blessed after Ragnarok.

GIUKI: King of Nibelungs; father of Gunnar, Hogni, Guttorm, and Gudrun.

GLATHSHEIM (Gladshheim): Hall of gods in Asgard.

GRAM (meaning "Angry"): Sigmund's sword; rewelded by Regin; used by Sigurd to slay Fafnir.

GREYFELL: Sigmund's horse; descended from Sleipnir.

GRIMHILD: Mother of Gudrun; administered magic potion to Sigurd which made him forget Brynhild.

GUÐRUN: Daughter of Giuki; wife of Sigurd; later wife of Atli and Jonakr.

GUNNAR: Son of Giuki; in his semblance Sigurd won Brynhild for him; slain at hall of Atli.

GUTTORM: Son of Giuki; slew Sigurd at Brynhild's request.

HEIMDALL (Heimdallr): Guardian of Asgard.

HEL: Goddess of dead and queen of underworld; daughter of Loki.

HIORDIS: Wife of Sigmund; mother of Sigurd.

HOENIR: One of creators of Ask and Embla; son of Bur.

HOGNI: Son of Giuki; slain at hall of Atli.

HOTH (Hoder, Hodur): Blind god of night and darkness; slayer of Balder at instigation of Loki.

ITHUNN (Ithun, Iduna): Keeper of golden apples of youth; wife of Bragi.

JONAKR: Third husband of Gudrun.

JORMUNREK: Slayer of Swanhild; slain by sons of Gudrun.

JOTUNNHEIM (Jotunheim): Abode of giants.

LIF and **LIFTHRASIR**: First man and woman after Ragnarok.

LOKI: God of evil and mischief; instigator of Balder's death.

LOTHUR (Lodur): One of creators of Ask and Embla.

MIDGARD (Midgarth): Abode of mankind; the earth.

MIDGARD SERPENT: Sea monster; offspring of Loki; slays, and is slain by, Thor at Ragnarok.

MIMIR: Giant; guardian of well in Jotunheim at root of Yggdrasill; knower of past and future.

MJOLLNIR: Magic hammer of Thor.

NAGLFAR: Ship to be used by giants in attacking Asgard at Ragnarok; built from nails of dead men.

NANNA: Wife of Balder.

NIBELUNGS: Dwellers in northern kingdom ruled by Giuki.

NIFLHEIM (Nifelheim): Outer region of cold and darkness; abode of Hel.

NJORTH: Father of Frey and Freya; originally one of Vanir.

NORNS: Demigoddesses of fate: Urth (Urdur) (Past), Verthandi (Verdandi) (Present), Skuld (Future).

ODIN (Othin): Head of Aesir; creator of world with Vili and Ve; equivalent to Woden (Wodan, Wotan) in Teutonic mythology.

OTTER: Son of Rodmar; slain by Loki; his skin filled with gold hoard of Andvari to appease Rodmar.

RAGNAROK: Final destruction of present world in battle between gods and giants; some minor gods will survive, and Lif and Lifthrasir will repeople world.

REGIN: Blacksmith; son of Rodmar; foster-father of Sigurd.

REKIR: King of Huns; son of Sigl.

RODMAR: Father of Regin, Otter, and Fafnir; demanded Otter's skin be filled with gold; slain by Fafnir, who stole gold.

SIF: Wife of Thor.

SIGGEIR: King of Goths; husband of Signy; he and his sons slew Volsung and his sons, except Sigmund; slain by Sigmund and Sinfiotli.

SIGI: King of Huns; son of Odin.

SIGMUND: Son of Volsung; brother of Signy, who bore him Sinfiotli; husband of Hiordis, who bore him Sigurd.

SIGNY: Daughter of Volsung; sister of Sigmund; wife of Siggeir; mother by Sigmund of Sinfiotli.

SIGURD: Son of Sigmund and Hiordis; wakened Brynhild from magic sleep; married Gudrun; slain by Guttorm at instigation of Brynhild.

SIGYN: Wife of Loki.

SINFIOTLI: Son of Sigmund and Signy.

SKULD: See Norns.

SLEIPNIR (Sleipner): Eight-legged horse of Odin.

SURT (Surtr): Fire demon; slays Frey at Ragnarok.

SVARTALFAHEIM: Abode of dwarfs.

SWANHILD: Daughter of Sigurd and Gudrun; slain by Jormunrek.

THOR: God of thunder; oldest son of Odin; equivalent to Germanic deity Donar.

TYR: God of war; son of Odin; equivalent to Tiu in Teutonic mythology.

ULL (Ullr): Son of Sif; stepson of Thor.

URTH: See Norns.

VALHALLA (Valhall): Great hall in Asgard where Odin received souls of heroes killed in battle.

VALI: Odin's son; Ragnarok survivor.

VALKYRIES: Virgins, messengers of Odin, who selected heroes to die in battle and took them to Valhalla; generally considered as nine in number.

VANIR: Early race of gods; three survivors, Njorth, Frey, and Freya, are associated with Aesir.

VE: Brother of Odin; one of creators of world.

VERTHANDI: *See* Norns.

VILI: Brother of Odin; one of creators of world.

VINGOLF: Abode of goddesses in Asgard.

VITHARR (Vithar): Son of Odin; survivor of Ragnarok.

VOLSUNG: Descendant of Odin, and

father of Signy, Sigmund; his descendants were called Volsungs.

YGGDRASIL: Giant ash tree springing from body of Ymir and supporting universe; its roots extended to Asgard, Jotunnheim, and Niflheim.

YMIR (Ymer): Primeval frost giant killed by Odin, Vili, and Ve; world created from his body; also, from his body sprang Yggdrasil.

Egyptian Mythology

AARU: Abode of the blessed dead.

AMEN (Amon, Ammon): One of chief Theban deities; united with sun god under form of Amen-Ra.

AMENTI: Region of dead where souls were judged by Osiris.

ANUBIS: Guide of souls to Amenti; son of Osiris; jackal-headed.

APIS: Sacred bull, an embodiment of Ptah; identified with Osiris as Osiris-Apis or Serapis.

GEB (Keb, Seb): Earth god; father of Osiris; represented with goose on head.

HATHOR (Athor): Goddess of love and mirth; cow-headed.

HORUS: God of day; son of Osiris and Isis; hawk-headed.

ISIS: Goddess of motherhood and fertility; sister and wife of Osiris.

KHEPERA: God of morning sun.

KHNEMU (Khnum, Chnuphis, Chnemu, Chnum): Ram-headed god.

KHONSU (Khensu, Khuns): Son of Amen and Mut.

MENTU (Ment): Solar deity, sometimes considered god of war; falcon-headed.

MIN (Khem, Chem): Principle of physical life.

MUT (Maut): Wife of Amen.

NEPHTHYS: Goddess of the dead; sister and wife of Set.

NU: Chaos from which world was created, personified as a god.

NUT: Goddess of heavens; consort of Geb.

OSIRIS: God of underworld and judge of dead; son of Geb and Nut.

PTAH (Phtha): Chief deity of Memphis.

RA: God of the Sun, the supreme god; son of Nut; Pharaohs claimed descent from him; represented as lion, cat, or falcon.

SERAPIS: God uniting attributes of Osiris and Apis.

SET (Seth): God of darkness or evil; brother and enemy of Osiris.

SHU: Solar deity; son of Ra and Hathor.

TEM (Atmu, Atum, Tum): Solar deity.

THOTH (Dhouti): God of wisdom and magic; scribe of gods; ibis-headed.

Rulers of England and Great Britain

Saxons¹

Name	Born	Ruled ²
Egbert ³	c. 775	828- 839
Ethelwulf	?	839- 858
Ethelbald	?	858- 860
Ethelbert	?	860- 866
Ethelred I	?	866- 871
Alfred the Great	849	871- 899
Edward the Elder	c. 870	899- 924
Athelstan	895	924- 939
Edmund I the Deed-doer ..	921	939- 946
Edred	c. 925	946- 955
Edwy the Fair	c. 943	955- 959
Edgar the Peaceful	943	959- 975
Edward the Martyr	c. 962	975- 979
Ethelred II the Unready ..	868	979-1016
Edmund II Ironside	c. 993	1016-1016

Danes

Canute	995	1016-1035
Harold I Harefoot	c.1016	1035-1040
Hardecnute	c.1018	1040-1042

Saxons

Edward the Confessor	c.1004	1042-1066
Harold II	c.1020	1066-1066

House of Normandy

Name	Born	Ruled ²
William I the Conqueror ..	1027	1066-1087
William II Rufus	c.1056	1087-1100
Henry I Beaulerc	1068	1100-1135
Stephen of Blois	c.1100	1135-1154

House of Plantagenet

Henry II	1133	1154-1189
Richard I Coeur de Lion ..	1157	1189-1199
John Lackland	1167	1199-1216
Henry III	1207	1216-1272
Edward I Longshanks	1239	1272-1307
Edward II	1284	1307-1327
Edward III	1312	1327-1377
Richard II	1367	1377-1399 ⁴

House of Lancaster

Henry IV Bolingbroke	1367	1399-1413
Henry V	1387	1413-1422
Henry VI	1421	1422-1461 ¹³

House of York

Edward IV	1442	1461-1483 ¹⁵
Edward V	1470	1483-1483
Richard III	1452	1483-1485

House of Tudor

Name	Born	Rule ^d
Henry VII	1457	1485-1509
Henry VIII	1491	1509-1547
Edward VI	1537	1547-1553
Jane (Lady Jane Grey) ⁸ ..	1537	1553-1553
Mary I ("Bloody Mary") ..	1516	1553-1558
Elizabeth I	1533	1558-1603

House of Stuart

James I ⁹	1566	1603-1625
Charles I	1600	1625-1649

Commonwealth

Council of State		1649-1653
Oliver Cromwell ⁷	1599	1653-1658
Richard Cromwell ⁷	1626	1658-1659 ⁸

Restoration of House of Stuart

Charles II	1630	1660-1685
James II	1633	1685-1688 ⁹

¹ Dates for Saxon Kings are still subjects of controversy. ² Year of end of rule is also that of death, unless otherwise indicated. ³ Became King of West Saxons in 802; considered (from 828) first King of all England. ⁴ Died 1400. ⁵ Nominal Queen for 9 days; not counted as Queen by some authorities. She was beheaded in 1554.

Restoration of House of Stuart (cont'd)

Name	Born	Rule ^d
William III ¹⁰	1650	1689-1702
Mary II ¹⁰	1662	1689-1694
Anne	1665	1702-1714

House of Hanover

George I	1660	1714-1727
George II	1683	1727-1760
George III	1738	1760-1820
George IV	1762	1820-1830
William IV	1765	1830-1837
Victoria	1819	1837-1901

House of Saxe-Coburg¹¹

Edward VII	1841	1901-1910
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House of Windsor¹¹

George V	1865	1910-1936
Edward VIII	1894	1936-1936 ¹²
George VI	1895	1936-1952
Elizabeth II	1926	1952-

¹ Ruled in Scotland as James VI (1567-1625). ⁷ Lord Protector. ⁸ Died 1712. ⁹ Died 1701. ¹⁰ Joint rulers 1689-1694. ¹¹ Names changed from Saxe-Coburg to Windsor in 1917. ¹² Has been known since his abdication as the Duke of Windsor. ¹³ Henry VI reigned again briefly 1470-71.

British Prime Ministers Since 1770

Name	Term	Name	Term
Lord North (Tory)	1770-1782	Marquis of Salisbury (Conservative)	1885-1886
Marquis of Rockingham (Whig) ..	1782-1782	William E. Gladstone (Liberal) ...	1886-1886
Earl of Shelburne (Whig)	1782-1783	Marquis of Salisbury (Conservative)	1886-1892
Duke of Portland (Coalition)	1783-1783	William E. Gladstone (Liberal) ..	1892-1894
William Pitt, the Younger (Tory) ..	1783-1801	Earl of Rosebery (Liberal)	1894-1895
Henry Addington (Tory)	1801-1804	Marquis of Salisbury (Conservative)	1895-1902
William Pitt, the Younger (Tory) ..	1804-1806	Earl Balfour (Conservative)	1902-1905
Baron Grenville (Whig)	1806-1807	Sir H. Campbell-Bannerman (Liberal)	1905-1908
Duke of Portland (Tory)	1807-1809	Herbert H. Asquith (Liberal)	1908-1915
Spencer Perceval (Tory)	1809-1812	Herbert H. Asquith (Coalition) ..	1915-1916
Earl of Liverpool (Tory)	1812-1827	David Lloyd George (Coalition) ...	1916-1922
George Canning (Tory)	1827-1827	Andrew Bonar Law (Conservative) ..	1922-1923
Viscount Goderich (Tory)	1827-1828	Stanley Baldwin (Conservative) ..	1923-1924
Duke of Wellington (Tory)	1828-1830	James Ramsay MacDonald (Labour)	1924-1924
Earl Grey (Whig)	1830-1834	Stanley Baldwin (Conservative) ..	1924-1929
Viscount Melbourne (Whig)	1834-1834	James Ramsay MacDonald (Labour)	1929-1931
Sir Robert Peel (Tory)	1834-1835	James Ramsay MacDonald (Coalition)	1931-1935
Viscount Melbourne (Whig)	1835-1841	Stanley Baldwin (Coalition)	1935-1937
Sir Robert Peel (Tory)	1841-1846	Neville Chamberlain (Coalition) ..	1937-1940
Earl Russell (Whig)	1846-1852	Winston Churchill (Coalition)	1940-1945
Earl of Derby (Tory)	1852-1852	Clement R. Attlee (Labour)	1945-1951
Earl of Aberdeen (Coalition)	1852-1855	Sir Winston Churchill (Conservative)	1951-1955
Viscount Palmerston (Liberal)	1855-1858	Sir Anthony Eden (Conservative) ..	1955-1957
Earl of Derby (Conservative)	1858-1859	Harold Macmillan (Conservative) ..	1957-
Viscount Palmerston (Liberal)	1859-1865		
Earl Russell (Liberal)	1865-1866		
Earl of Derby (Conservative)	1866-1868		
Benjamin Disraeli (Conservative) ..	1868-1868		
William E. Gladstone (Liberal)	1868-1874		
Benjamin Disraeli (Conservative) ..	1874-1880		
William E. Gladstone (Liberal)	1880-1885		

Birthstones

Source: Jewelry Industry Council.

January	Garnet	July	Ruby
February	Amethyst	August	Peridot or Sardonyx
March	Aquamarine or Bloodstone	September	Sapphire
April	Diamond	October	Opal or Tourmaline
May	Emerald	November	Topaz
June	Pearl, Alexandrite or Moonstone	December	Turquoise or Zircon

Rulers of France

Carolingian Dynasty

Name	Born	Ruled ¹
Pepin the Short	c. 714	751-768
Charlemagne ²	742	768-814
Louis I the Debonair ³	778	814-840
Charles I the Bald ⁴	823	840-877
Louis II the Stammerer	846	877-879
Louis III ⁵	c. 863	879-882
Carloman ⁶	?	879-884
Charles II the Fat ⁶	839	884-887 ⁷
Eudes (Odo), Count of Paris	?	888-898
Charles III the Simple ⁸	879	893-923 ⁹
Robert I ¹⁰	c. 865	922-923
Rudolf (Raoul), Duke of Burgundy	?	926-936
Louis IV d'Outremer	c. 921	936-954
Lothair	941	954-986
Louis V the Sluggard	c. 967	986-987

Capetian Dynasty

Hugh Capet	c. 940	987-996
Robert II the Pious ¹¹	c. 970	996-1031
Henry I	1008	1031-1060
Philip I	1052	1060-1108
Louis VI the Fat	1081	1108-1137
Louis VII the Young	c. 1121	1137-1180
Philip II (Philip Augustus)	1165	1180-1223
Louis VIII the Lion	1187	1223-1226
Louis IX (St. Louis)	1214	1226-1270
Philip III the Bold	1245	1270-1285
Philip IV the Fair	1268	1285-1314
Louis X the Quarreler	1289	1314-1316
John I	1316	1316-1316
Philip V the Tall	1294	1316-1322
Charles IV the Fair	1294	1322-1328

House of Valois

Philip VI	1293	1328-1350
John II the Good	1319	1350-1364
Charles V the Wise	1337	1364-1380
Charles VI the Well-Beloved	1368	1380-1422
Charles VII	1403	1422-1461
Louis XI	1423	1461-1483
Charles VIII	1470	1483-1498
Louis XII the Father of the People	1462	1498-1515
Francis I	1494	1515-1547
Henry II	1519	1547-1559
Francis II	1544	1559-1560
Charles IX	1550	1560-1574
Henry III	1551	1574-1589

House of Bourbon

Henry IV of Navarre	1553	1589-1610
Louis XIII	1601	1610-1643
Louis XIV the Great	1638	1643-1715
Louis XV the Well-Beloved	1710	1715-1774

House of Bourbon (cont'd)

Name	Born	Ruled ¹
Louis XVI	1754	1774-1792 ¹²
Louis XVII (Louis Charles de France) ¹³	1785	1793-1795

First Republic

National Convention	....	1792-1795
Directory (Directoire)	1795-1799

Consulate

Napoleon Bonaparte ¹⁴	1769	1799-1804
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First Empire

Napoleon I	1769	1804-1815 ¹⁵
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Restoration of House of Bourbon

Louis XVIII le Désiré	1755	1814-1824
Charles X	1757	1824-1830 ¹⁶

Bourbon-Orleans line

Louis Philippe ("Citizen King")	1773	1830-1848 ¹⁷
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Second Republic

Louis Napoleon ¹⁸	1808	1848-1852
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Second Empire

Napoleon III (Louis Napoleon)	1808	1852-1871 ¹⁹
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Third Republic

Louis Adolphe Thiers ²⁰	1797	1871-1873 ²¹
Marie E. P. M. de MacMahon ²⁰	1808	1873-1879 ²²
François P. J. Grévy ²⁰	1807	1879-1887 ²³
Sadi Carnot ²⁰	1837	1887-1894
Jean Casimir-Périer ²⁰	1847	1894-1895 ²⁴
François Félix Faure ²⁰	1841	1895-1899
Émile Loubet ²⁰	1838	1899-1906 ²⁵
Clement Armand Fallières ²⁰	1841	1906-1913 ²⁶
Raymond Poincaré ²⁰	1860	1913-1920 ²⁷
Paul E. L. Deschanel ²⁰	1856	1920-1920 ²⁸
Alexandre Millerand ²⁰	1859	1920-1924 ²⁹
Gaston Doumergue ²⁰	1863	1924-1931 ³⁰
Paul Doumer ²⁰	1857	1931-1932
Albert Lebrun ²⁰	1871	1932-1940 ³¹

Vichy Government

Henri Philippe Pétain ³²	1856	1940-1944 ³³
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Provisional Government

Charles de Gaulle ³⁴	1890	1944-1946 ³⁵
Félix Gouin ³⁴	1884	1946-1946 ³⁵
Georges Bidault ³⁴	1899	1946-1947 ³⁵

Fourth Republic

Vincent Auriol ³⁰	1884	1947-1954 ³⁵
René Coty ³⁰	1882	1954-

¹ Year of end of rule is also that of death, unless otherwise indicated. ² Crowned Emperor of the West in 800. ³ Holy Roman Emperor 814-840. ⁴ Holy Roman Emperor 875-877 as Charles II. ⁵ Ruled jointly 879-882. ⁶ Holy Roman Emperor 881-887 as Charles III. ⁷ Died 888. ⁸ King 893-898 in opposition to Eudes. ⁹ Died 929. ¹⁰ Not counted in regular line of Kings of France by some authorities. Elected by nobles but killed in Battle of Solosnes. ¹¹ Sometimes called Robert I. ¹² Executed 1793. ¹³ Titular King only. He died in prison according to official reports, but many pretenders appeared during the Bourbon restoration. ¹⁴ As First Consul, Napoleon

held the power of government. In 1804, he became Emperor. ¹⁵ Abdicated first time June 1814. Re-entered Paris Mar. 1815, after escape from Elba; Louis XVIII fled to Ghent. Abdicated second time June 1815. He named as his successor his son, Napoleon II, who was not acceptable to the Allies. He died 1821. ¹⁶ Died 1836. ¹⁷ Died 1850. ¹⁸ President; became Emperor in 1852. ¹⁹ Died 1873. ²⁰ President. ²¹ Died 1877. ²² Died 1893. ²³ Died 1891. ²⁴ Died 1907. ²⁵ Died 1920. ²⁶ Died 1931. ²⁷ Died 1934. ²⁸ Died 1922. ²⁹ Died 1942. ³⁰ Died 1937. ³¹ Died 1950. ³² Chief of State. ³³ Died 1951. ³⁴ Interim President. ³⁵ Still alive.

Rulers of Germany and Prussia

Kings of Prussia

Name	Born	Ruled ¹
Frederick I ²	1657	1701-1713
Frederick William I	1688	1713-1740
Frederick II the Great	1712	1740-1786
Frederick William II	1744	1786-1797
Frederick William III	1770	1797-1840
Frederick William IV	1795	1840-1861
William I	1797	1861-1871 ³

Emperors of Germany

William I	1797	1871-1888
Frederick III	1831	1888-1888
William II	1859	1888-1918 ⁴

¹ Year of end of rule is also that of death, unless otherwise indicated. ² Was Elector of Brandenburg (1688-1701) as Frederick III. ³ Became Emperor of Germany

Heads of the Reich

Name	Born	Ruled ¹
Friedrich Ebert ⁵	1871	1919-1925 ⁶
Paul von Hindenburg ⁶	1847	1925-1934
Adolf Hitler ^{6,7}	1889	1934-1945 ⁸
Karl Doenitz ⁸	1891	1945-1945 ⁸

German Federal Republic (Western)

Theodor Heuss ⁵	1884	1949-
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German Democratic Republic (Eastern)

Wilhelm Pieck ⁵	1876	1949-
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in 1871. ⁴ Died 1941. ⁵ President. ⁶ Führer. ⁷ Named Chancellor by President Hindenburg in 1933. ⁸ Still alive.

Rulers of Russia Since 1533

Name	Born	Ruled ¹
Ivan IV the Terrible	1530	1533-1584
Theodore I	1557	1584-1598
Boris Godunov	c.1551	1598-1605
Theodore II	1589	1605-1605
Demetrius I ²	?	1605-1606
Basil IV Shulski	?	1606-1610 ³
"Time of Troubles"		1610-1613
Michael Romanov	1596	1613-1645
Alexis I	1629	1645-1676
Theodore III	1656	1676-1682
Ivan V ⁴	1666	1682-1689 ⁵
Peter I the Great ⁴	1672	1682-1725
Catherine I	c.1684	1725-1727
Peter II	1715	1727-1730
Anna	1693	1730-1740
Ivan VI	1740	1740-1741 ⁶
Elizabeth	1709	1741-1762
Peter III	1728	1762-1762

¹ Year of end of rule is also that of death, unless otherwise indicated. ² Also known as Pseudo-Demetrius. ³ Died 1612. ⁴ Ruled jointly until 1689, when Ivan was

Name	Born	Ruled ¹
Catherine II the Great	1729	1762-1796
Paul I	1754	1796-1801
Alexander I	1777	1801-1825
Nicholas I	1796	1825-1855
Alexander II	1818	1855-1881
Alexander III	1845	1881-1894
Nicholas II	1863	1894-1917 ⁷

Provisional Government

Prince Georgi Lvov ⁸	1861	1917-1917 ⁹
Alexander Kerensky ⁸	1881	1917-1917 ¹⁰

U.S.S.R.

Nikolai Lenin ⁸	1870	1917-1924
Joseph Stalin ¹¹	1879	1924-1953
Georgi M. Malenkov ⁸	1902	1953-1955 ¹⁰
Nikolai A. Bulganin ⁸	1895	1955-

deposed. ⁵ Died 1696. ⁶ Died 1764. ⁷ Killed 1918. ⁸ Premier. ⁹ Died 1925. ¹⁰ Still alive. ¹¹ General Secretary of Communist party; Premier 1941-53.

Animal Names: Male, Female and Young

Source: Grace Davall, N.Y. Zoological Society.

Animal	Male	Female	Young	Animal	Male	Female	Young
Ass	Jack	Jenny	Colt	Horse	Stallion	Mare	Foal
Bear	He-bear	She-bear	Cub	Lion	Lion	Lioness	Cub
Cat	Tom	Tabby	Kitten	Rabbit	Buck	Doe	.....
Cattle	Bull	Cow	Calf	Sheep	Ram	Ewe	Lamb
Chicken	Rooster	Hen	Chick	Swan	Cob	Pen	Cygnets
Deer	Buck	Doe	Fawn	Swine	Boar	Sow	Shoat or piglet
Dog	Dog	Bitch	Pup	Tiger	Tiger	Tigress	Cub
Duck	Drake	Duck	Duckling	Whale	Bull	Cow	Calf
Elephant	Bull	Cow	Calf	Wolf	Dog	Bitch	Cub, pup or whelp
Fox	Dog	Vixen	Cub				
Goose	Gander	Goose	Gosling				

Mason and Dixon's Line

Mason and Dixon's Line (often called the Mason-Dixon Line) is the boundary between Pennsylvania and Maryland, running at a north latitude of 39°43'19.11". The greater part of it was surveyed from 1763-67 by Charles Mason and Jeremiah

Dixon, English astronomers who had been appointed to settle a dispute between the colonies. As the line was partly the boundary between the free and the slave states, it has come to signify the division between the North and the South.

WORD SECTION

New and Newly Important Words and Meanings
Words Frequently Misspelled . . . Forms of Address

Prepared by

G. & C. MERRIAM CO., Springfield, Mass.

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Webster's New Collegiate Dictionary

New and Newly Important Words and Meanings

Note: This is a selected list of words, from a wide variety of subject areas, that have become of fairly recent general interest. Many, as *radar*, *colorcast*, and *dynel*, are new in the sense that they were recently introduced into the language. Some, as *omnibus*, *libretto*, and *alligator*, are recently acquired new or extended senses of well-established terms. Others, as *rocket ship*, *snollygoster* and *fission*, are terms that have been in limited use within certain circles for a considerable time but have only recently become generally used and known. It would be out of keeping with the spirit of a list like this and beyond the space available to treat the entries in formal dictionary fashion. In general, only the commonest spellings and the most basic and important of the new senses have been given

ABSTRACT: Characterized by designs in which an artist, using lines or blocks of color rather than pictures of actual objects, attempts to set forth his feelings or ideas.

ACETATE RAYON: A rayon fiber made with cellulose acetate

ACK-ACK: An anti-aircraft gun; also, the fire of such a gun.

ACRONYM: A word formed from the initial letters or the first and last syllables of the words in a compound (*jato* from *jet assisted take-off*; *motel* from *motorists' hotel*).

ACTH: A compound obtained from the pituitary gland, used especially in the treatment of arthritis.

ACTINOMYCIN: An antibiotic isolated from certain soil bacteria.

ADDITIVE: Any substance which, when added to another product, such as gasoline or a storage battery, is supposed to make it more powerful or longer-lasting.

AEROEMBOLISM: An abnormal bodily condition, called also *air bends*, due to the formation of nitrogen bubbles in the blood and spinal fluid brought about by rapid ascent into high altitudes.

AGITPROP: Serving as a means for spreading propaganda intended to promote militancy among the common people;—applied originally to pro-Communist activities.

AIRLIFT: A supply line operated by aircraft.

AIRSTRIP: A hard-surfaced runway for the take-off and landing of aircraft; also, a portable runway made of steel sheets.

ALCOMETER: A device for detecting drunkenness by measuring the amount of alcohol in a sample of exhaled air.

ALERT: A signal to warn of danger, as from hostile aircraft; also, the period of time in which the signal is in effect.

ALLIGATOR: A flat-bottomed, armored military vehicle for use on land or water.

ALL-OUT: Making use of all available power and resources (as, an *all-out* effort).

AMPLITUDE MODULATION or **AM:** A system of radio broadcasting in which the amplitude of the carrier wave is modulated in accordance with the form of the sound or signal wave.

AMTRAC: An amphibious tractor, used chiefly as a military vehicle.

ANGLE: A special approach or technique for achieving an end, as for writing a news story or promoting an interest.

ANTIBIOTIC: A substance produced by a living organism, especially by a bacterium or fungus, that is used to kill or stop the growth of disease germs.

ANTIHISTAMINE: An agent used in the prevention or treatment of allergic reactions.

AQUACADE: An elaborate water show consisting of exhibitions of swimming, diving, and acrobatics, accompanied by music.

ARENA THEATER = **THEATRE-IN-THE-ROUND**.

ARTIFICIAL INSEMINATION: Introduction of semen into the genital tract of a female animal by other than the natural means.

ASTRODOME: A transparent dome on the upper surface of an airplane from which the navigator makes celestial observations.

ATEBRIN: An antimalarial drug, quinacrine dihydrochloride.

ATOMIC BOMB, ATOM BOMB, or A-BOMB: A bomb with violent explosive power that is due to a sudden release of atomic energy.

ATOMIC COCKTAIL: A radioactive substance such as sodium iodide, dissolved in water and given as a drink to cancer patients.

AUDIO: Pertaining to or used in the transmission or reception of sound in TV.

- AUDIOPHILE:** One who is enthusiastic about sound, especially music from high-fidelity broadcasts or recordings.
- AUDIOVISUAL:** Involving both hearing and seeing (as, *audiovisual* education uses films, slides, phonograph records, and the like, to supplement instruction).
- AUREOMYCIN:** An antibiotic isolated from a soil microorganism.
- AUSTERITY:** A severe or enforced economy characterized by a lack of luxuries (as, postwar *austerity* in Great Britain).
- AUTOMATIC TRANSMISSION:** Automotive transmission in which the gears are shifted automatically.
- AUTOMATION:** The substitution of machines or mechanical devices for human beings in a manufacturing process.
- BABUSHKA:** A triangular kerchief worn over the head and tied under the chin.
- BABY SITTER:** One who is hired, usually for a few hours, to care for children while the parents are absent from the home.
- BALL-POINT PEN:** A fountain pen in which the writing point is a tiny ball that rotates freely against an inking magazine.
- BAMBOO CURTAIN:** The military, political, and propaganda barrier isolating territory controlled by the Chinese Communists.
- BANK:** A place for storing a reserve supply; —occurs in such combinations as *blood bank*, *eye bank*, *bone bank*, *skin bank*.
- BANKROLLER:** One having a sizable bankroll or a ready and ample supply of funds.
- BARBITURATE:** One of a large group of drugs often used as sedatives or antispasmodics.
- BARREL:** To move at a high speed in a straight course; —used especially of vehicles.
- BASIC ENGLISH:** A copyrighted system intended to simplify the learning of English by the use of a vocabulary limited to the 850 most essential words.
- BATHYTHERMOGRAPH:** An instrument for recording the temperature variations of sea or fresh water according to depth.
- BAZOOKA:** A portable rocket-launcher, used chiefly as an antitank weapon.
- BEACHHEAD:** An area on an enemy shore which an advance force occupies and defends.
- BEAM:** A directional radio signal for guiding aircraft, audible as a continuous tone as long as the aircraft stays on course, but as a broken tone if it veers to the left or right.
- BEBOP:** A style of jazz with many notes to the measure, usually played loud and fast and characterized by changing of key and accenting of odd beats.
- BELLYLAND:** To land an airplane on the under side of its fuselage without using the landing gear.
- BENTHOSCOPE:** A steel sphere used for deep-sea diving and observation.
- BETATRON:** An apparatus in which electrons are accelerated to high speed and formed into beta rays for use in generating high-voltage X-rays or for nuclear bombardment.
- BIG WHEEL, slang:** An important, impressive person; sometimes one who only feels himself important.
- BIKINI:** A woman's two-piece bathing suit of abbreviated style.
- BINAURAL SOUND:** Sound recorded or transmitted by pairs of equipment in order to give the listener the effect of having heard the original with his own two ears.
- BIOLOGICAL WARFARE:** Warfare in which living organisms, especially disease germs, are used against human, animal, and plant life; also, warfare involving the use of synthetic chemicals against plants.
- BIRD, slang:** An enthusiast (as, a *bird* about music); also, any person thought to be odd or strange.
- BITCH, slang:** To gripe; to complain.
- BLACK MARKET:** Trade in violation of official controls or restrictions, especially those concerning price ceilings, rationing, and priorities; also, a market or group carrying on such trade.
- BLISTER:** A compartment, often covered by a transparent dome, that protrudes from the fuselage of an aircraft and is usually occupied by a gunner or observer.
- BLITZ:** A violent, swift military attack; also, any sudden, overpowering attack; —short for *blitzkrieg*.
- BLOCKBUSTER:** A huge, high-explosive demolition bomb, usually one weighing two, four, or six tons.
- BLOODMOBILE:** An automobile equipped for collecting blood from volunteer donors.
- BLUEPRINT:** A detailed plan for a project or program of action (as, a *blueprint* for mobilization).
- BLUE RIBBON JURY:** A panel of jurors selected for qualifications such as education or property ownership, that may be called to sit in complicated cases.
- BOBBY SOCK:** A girl's sock reaching above the ankle.
- BOBBY SOXER:** A young girl, especially one in the early teens; —from the wearing of bobby socks.
- BOMB:** A small container in which a liquid, as an insecticide, is held under pressure and released as a spray.
- BOOBY TRAP:** An explosive device concealed and attached to some harmless-looking object; also, any trap for the unsuspecting.
- BOOGIE-WOOGIE:** A style of playing blues on the piano, characterized by a persistent bass rhythm and elaborate treatments of a simple melody, often in contrary motion to the bass.
- BOOKBURNING:** Systematic destruction, usually by a government, of books believed to contain dangerous ideas; hence, the suppression of ideas.
- BOOKMOBILE:** A closed autotruck with shelves of books, which serves as a traveling library or bookstore.
- BOOSTER:** A device for strengthening radio or television signals in areas where the reception is weak.
- BOP:** Short for *bebop*; also, one fond of *bebop*.
- BOTTLENECK:** To delay progress; to hold up a process, especially at a critical point.
- BOYS' TOWN:** A farm or school for homeless or delinquent boys, organized like a town and governed by the boys themselves.

BRAINWASHING: The forcible replacement of one set of political ideas by another set, especially through indoctrination or mental torture.

BRASS: Military and naval officers of high rank or position, especially those in top commands.

BREAK: A short rest period, often one set aside from the working day.

BRIEF: To give final, last-minute instructions or information (as, to *brief* the crew of a bomber before a mission).

BROWNOUT: A dimming of street lights and various other outdoor lighting, chiefly to conserve fuel supplies.

BRUSHOFF: A curt or offhand dismissal (as, to give someone the *brushoff*).

BUDGIE: Short for *budgerigar*, the zebra parakeet.

BUILD-UP: Extremely favorable notice, as by the press or radio, designed to popularize a product, personality, or organization.

BUILT-IN: Functioning as a part of, but separately identifiable from, a given unit (as, *built-in* shelves); also, conditioned (as, a *built-in* reaction).

BULLDOZER: A tractor-driven machine with a broad, blunt horizontal blade or ram, used especially in road building and clearing land.

BUMP: To push (a person) out of his place in order to take it for oneself (as, to *bump* a man from his job).

BURGER: A sandwich usually made of a flat roll cut in half and filled either with hamburger or another food specified (as, *pork-burger* or *beefburger*).

BURP GUN: A machine pistol.

BUTADIENE: A colorless gas, made from petroleum and alcohol, used in the making of synthetic rubber.

BUY, *slang*: To accept; to agree to; to assent (as, to *buy* an idea or an argument).

BUZZ: To fly an airplane fast and at a low altitude over (as, to *buzz* an airfield).

CABANA: A beach shelter resembling a cabin, usually with an open side facing the sea.

CADRE: A nucleus of thoroughly indoctrinated leaders who actively promote the interests of a communist or revolutionary party.

CAFÉ CURTAINS: Plain, straight-hanging curtains, usually hung on poles by loops or rings, used to cover the lower part of a window or door.

CAFÉ SOCIETY: People who frequent fashionable cafés and night clubs.

CALYPSO: A ballad in African rhythm, often a parody or a satire on current events, sung especially by natives of the British West Indies as part of a pre-Lenten carnival.

CANDID CAMERA: A camera, usually a small one with a fast lens, used for taking unposed, informal pictures, usually without the subject's knowledge.

CANNIBALIZE: To dismantle a machine in order to get parts for use as replacements in other machines.

CAPSULE: Of a small type or in a condensed or streamlined form (as, a *capsule* review, criticism, or submarine).

CAPTIVE AUDIENCE: An audience obliged to stay within hearing of a speech or broadcast, often being subjected to advertising or propaganda.

CARD-CARRYING MEMBER: A Communist to whom a party membership card has been issued and who presumably carries it on his person.

CARHOP: A waiter or waitress at a drive-in restaurant who serves food and drinks to customers in their parked cars.

CARPORT: A roofed shelter for an automobile, usually attached to another building, and with two or more open sides.

CARTRIDGE: A removable pickup in the tone arm of a phonograph.

CASUAL: Of clothing, designed in a simple, easy style suitable for informal or sports events.

CEILING: A maximum, as for a price, wage, fee, or rent, which is fixed as the upper legal limit by government authority, usually on the basis of the level prevailing at a certain date.

CERAMAL = CERMET.

CERMET: A strong, heat-resistant metallic alloy.

CHAIN REACTION: In chemistry and physics, a process which can continue itself because one of its resulting products is always able to start the process anew until the original material is used up.

CHALKBOARD: A smooth flat surface, often of slate or composition, for writing on with chalk.

CHALKTALK: A talk or lecture which the speaker illustrates by making drawings or cartoons as he talks.

CHANNEL: A narrow band of frequencies on which a radio or television program may be transmitted.

CHARACTER ASSASSINATION: The attempt to discredit or destroy the reputation of another person, often by making vague, unproved accusations.

CHEAP: Having a depreciated purchasing power or value, especially as the result of a currency inflation (as, *cheap* dollars).

CHEESECAKE: Photography or photographs intended to display or accent female charms or attractions; also, any photograph having a considerable amount of sex appeal.

CHICHI, *slang*: Stylish; chic; fashionable; also, affected or esoteric.

CHLORAMPHENICOL: An antibiotic effective against certain rickettsiae and viruses.

CHLORDANE or CHLORDAN: An odorless liquid insecticide.

CHORAL SPEAKING: Interpretive reading or recitation, usually of poetry or rhythmic prose, by a group of voices known as a *speech choir*.

CHOREOGRAPH: To compose and arrange a ballet or dance; also, to provide a subject or a piece of music with a ballet or dance.

CHOROSCRIP: A system of notation used in teaching and recording dance figures and steps.

CINCHER: A wide, snug-fitting ornamental belt for women.

CLASSIFIED: Forbidden to be revealed out-

- side authorized circles, for reasons of national security.
- CLOAK-AND-DAGGER:** Of literature, dealing in intrigue and melodramatic action, usually of characters in a colorful historical setting, and involving espionage, duels, or the like.
- CLOBBER, slang:** To beat or pound mercilessly; also, to defeat overwhelmingly.
- CLOSED CIRCUIT:** Television transmission in which the signal is not broadcast but can be received only by interconnected receivers.
- CLOUD CHAMBER:** A closed vessel containing saturated water whose sudden expansion makes visible by a trail of white droplets the passage of an ionized particle.
- CLOUD SEEDING:** The introduction of a substance, as dry ice or silver iodide, into certain types of clouds in order to cause rainfall.
- CLOVERLEAF:** A road plan resembling a four-leaf clover, in which one road passes over another, permitting traffic to merge without left-hand or abrupt turns or direct crossings.
- CLUTCH:** A critical point; a pinch (as, to come through in the *clutch*).
- CLUTCH BAG:** A woman's purse or bag, usually small and without a handle, which is carried in the hand.
- COAXIAL CABLE:** A cable used in the transmission of telegraph, telephone, and television signals, consisting of a tube of conducting material surrounding but insulated from a central conductor.
- COFFEE BREAK:** A rest period during the working day, allowing the employee time for a cup of coffee.
- COLD FRONT:** In meteorology, the forward boundary of a mass of cold air.
- COLD WAR:** A struggle between two nations or groups of nations, waged by use of political and economic strategy, propaganda, and other measures short of armed combat.
- COLD WAVE:** In hairdressing, a permanent wave produced by a chemical solution.
- COLLECTIVE SECURITY:** Security of all the members of an association of nations from aggression by any other nation or nations.
- COLORCAST:** A television broadcast in color.
- COMBO:** A small group of musicians, usually jazz players;—from *combination*.
- COMIC BOOK:** A paper-bound book made up of a series of cartoons or comic strips, sometimes humorous, often telling a story of adventure or crime.
- COMMANDO:** A band or unit of troops specially trained for making surprise raids into enemy territory; also, a member of such a unit.
- COMMERCIAL:** That portion of a sponsored radio or television program devoted to advertising; also, the script prepared for the advertising announcement.
- COMMIE:** A member or agent of the Communist party; also, a fellow traveler.
- COMPATIBLE:** Designating a system in which color television broadcasts may also be received in black and white on receivers not specially equipped for color reception.
- COMPOUND F:** A hormone used in the treatment of arthritis.
- CONDITIONER:** A substance which, when added to soil, improves aeration, workability, and crop yield.
- CONSCRIPT:** To enroll by compulsion for military service.
- CONTACT LENS:** A lens of glass or plastic fitted to the eyeball, worn instead of the usual eyeglass to correct defects of vision.
- CONTAINMENT:** Restraint; specif., the restriction of Communism to fixed territorial limits.
- CONTOUR FARMING:** A system of farming in which plowing and planting follow the contour lines of sloping land, thus retarding erosion from the runoff of rainwater.
- CONVERSATION PIECE:** Any unusual or distinctive article, as of clothing or furniture, which is likely to attract attention and provide a subject for conversation.
- CONVERTER:** A device for adapting a television receiver to receive channels other than those for which it was designed.
- CONVERTIPLANE:** An aircraft that takes off and lands like a helicopter but flies like a conventional airplane.
- COOKOUT:** An outing at which a meal is cooked and eaten in the open.
- CORN:** Corny acting or playing.
- CORNY:** Trite, stale; old-fashioned, or countrified; also, of music, played or sung in a bland, unsophisticated style.
- CORONARY THROMBOSIS:** A blood clot (a *thrombus*) occurring in an artery of the heart.
- CORTISONE:** A compound used in treating rheumatoid arthritis and certain allergies.
- COUNTER-INTELLIGENCE:** Organized activities of military intelligence services designed to block enemy sources of information and deceive the enemy by ruses, misinformation, and the like.
- COUNTERWORD:** A word used in popular speech in such a variety of situations that its original, specific meaning is lost and it serves only as a counter or token used in place of a more definite word (examples: *swell, awful, nice*).
- COURTESY CARD:** An identification card which supposedly assures its holder of favors or special treatment, as from the police.
- CRACK UP:** To crash or cause to crash, as an airplane; hence, to break down; collapse; go to pieces.
- CRASHLANDING:** An airplane landing in which the plane is either damaged or destroyed.
- CREDIT LINE:** A line, note, or name published with an article, news story, photograph, or the like, acknowledging the source.
- CREEPING:** Making, or thought to be making, inroads or undesired progress (as, *creeping socialism*).
- CREW CUT:** A short-cropped, bristly haircut for men.
- CURVACEOUS:** Having a feminine figure which is well-proportioned and marked by pronounced curves.
- CUTBACK:** A reduction in a prevailing rate, amount, or number (as, a production *cut-back*).

CYBERNETICS: Comparative study of the control system in the human brain and nervous system with that in such mechanical-electrical communication systems as computing machines.

CYCLOTRON: An apparatus used for imparting high speeds to electrified particles, used especially to bombard the nuclei of atoms in order to produce transmutations and artificial radioactivity.

DAISY: A circular cheese, usually about 12 to 14 inches in diameter and weighing between 18 and 24 pounds.

DDT: A colorless, odorless insecticide, used especially against body lice, flies, mosquitoes, and agricultural pests.

DEAD DUCK: Anything doomed or past recovery.

DEADPAN: A completely expressionless, immobile face.

DECAMISADO: A member of the Argentine working class.

DECONTROL: To remove control from (as, to decontrol the price of eggs).

DE-EMPHASIZE: To diminish in importance; to make less prominent (as, a move to de-emphasize football at a college).

DEEP-FREEZER: A cabinet where food may be quick-frozen and stored.

DEFICIT SPENDING: Spending in excess of income;—usually applied to a government.

DEGREE DAY: A unit that represents one degree of declination from any given point in the mean outdoor temperature for a day, often used in measuring fuel requirements for a building.

DE-ICER: Any system or mechanism used to rid or keep free of ice the wings and tail of an aircraft.

DELTA WING PLANE: A fast, high-flying airplane, triangular in shape, like the Greek letter delta.

DELTIOLGY: The hobby of collecting post cards.

DENAZIFY: To rid (the people or institutions of a Nazified country) of Nazism and its influence.

DENSENSITIZE: In psychiatry, to free from a neurotic state; to make immune to a morbid emotional domination.

DETECTAPHONE: A telephone apparatus equipped with a microphone transmitter, used especially for listening secretly.

DETERGENT: A soluble or liquid preparation, often called "soapless soap," that resembles soap in its ability to emulsify oils and hold dirt in suspension.

DIAL TONE: A steady hum, audible in a telephone receiver, indicating that the line is free and a number may be dialed.

DILLY: Something of superior or remarkable quality; often, something presenting unusual difficulties or complications.

DIM OUT: To obscure in dimness, as by restricting illumination to specks or slits of light, lights shaded from above, or blue lights.

DIRECTIVE: An order or instruction as to plan or procedure, such as might be issued by a military official, or by a government or business executive.

DISC JOCKEY or DISK JOCKEY: One who

conducts and announces a program of musical records, usually with advertising or nonmusical comments interspersed.

DISCOGRAPHY: A descriptive, classified catalogue or listing of phonograph records, usually including dates and performers.

DISCOPHILE: An enthusiastic collector or student of phonograph records.

DISPLACED PERSON or DP: A person driven or deported from his home country during World War II as a prisoner of war, or for forced labor, or because of his race, politics, or religion.

DOCUMENTARY: A film that depicts in artistic form a factual and authentic presentation, as of an event or a social or cultural phenomenon.

DOODLE: An aimless, somewhat automatic design, sketch, or scribbling made while one's mind is occupied with something else.

DOSIMETER: A device for measuring the amount of radioactivity absorbed by the body.

DOUBLE-DOME: A highbrow; an intellectual.

DOUBLE-TAKE: A delayed reaction to the importance or meaning of something that at first escaped notice;—usually in the phrase, to do a *double-take*.

DOUBLE TALK: Talk or writing that appears to be earnest and meaningful but is actually a mixture of sense, gibberish, and unintelligible verbiage.

DOUBLE-THINK: The ability to have in mind at the same time two contradictory beliefs and accept both;—coined by George Orwell in the novel *Nineteen Eighty-Four*.

DRIVE-IN: A place of business, as a theater or restaurant, designed to permit patrons to remain in their automobiles while watching a performance or making purchases.

DRONE: A pilotless airplane controlled by radio from the ground or another plane; also, a vessel similarly controlled.

DRUNKOMETER: A device for detecting and measuring the degree of alcoholic intoxication by analysis of the breath.

DUB: To provide (a film) with a new soundtrack; to blend music or sound effects into (a radio or television broadcast).

DUCK: An amphibious military vehicle having wheels and a propeller, that can be used as either a truck or a barge.

DYNEL: A synthetic textile fiber in staple form; also, the material made from this fiber.

EARMOLD: The portion of a hearing aid that fits into the ear.

ECDYSIASIS: A strip-teaser;—a humorous term coined by H. L. Mencken.

EGGHEAD: An intellectual; a highbrow.

ELDER STATESMAN: A man who has retired from active public life but continues to act as an unofficial advisor, especially to government officials.

ELECTRONICS: The branch of physics that deals with the emission, motion, and effects of electrons.

ELECTROSHOCK: A state of shock induced by the passage of an electric current through the brain and useful in the treatment of certain mental disorders.

EMCEE: A master of ceremonies;—from *M. C.*

- ENRICH:** To improve (a food) in nutritive value by adding vitamins and minerals to it during processing.
- ESCALATOR CLAUSE:** A clause in a contract providing adjustment to cover such possibilities as increases or decreases in costs of labor, material, or living.
- ESCAPE LITERATURE:** Literature or writing providing mental escape or distraction from routine or reality.
- EXPEDITER:** One whose job it is to ensure an adequate supply of raw materials for fulfilling production contracts and to direct the movement of processed goods to where they are needed or wanted.
- EXPOSURE METER:** An instrument used by photographers for indicating the correct amount of exposure under varying light conditions.
- EXPRESSWAY:** A superhighway.
- FADE:** In radio and television, to change gradually in loudness or distinctness (as, to *fade* a picture or a sound in or out).
- FAIR-TRADE AGREEMENT:** An agreement between the manufacturer and the distributor of a trade-marked article, prescribing a minimum price for its sale.
- FALTBOT:** A collapsible boat similar in size and shape to a kayak.
- FAST BUCK:** Money that can be made readily or quickly, usually with little effort.
- FEATHERBED RULE:** A union rule that requires an employer to hire unneeded workmen or to pay for duplication of jobs; also, one limiting the amount of work that workmen may do in a day.
- FEATHER MERCHANT, slang:** One who tries for easy jobs or is thought to be lazy; also, *military slang*, a civilian.
- FEATURETTE:** A short feature; specif., a motion picture of less than the usual length.
- FEEDBACK:** A partial return of the effects or product of a process to its source or to a preceding stage;—used especially of social, psychological, or biological systems.
- FELLOW TRAVELER:** One who sympathizes with and, often, furthers the program or ideals of, a group (originally, the Communist party) without being a member of the group.
- FIFTH COLUMN:** Secret supporters of an enemy engaged in sabotage or other subversive activity within defense lines.
- FINGER PAINTING:** A technique in which splotches of pigments (*finger paints*) are applied to wet paper and spread with the hands or fingers to form a picture or design.
- FISSION:** The splitting of the nucleus of an atom into two nearly equal parts, resulting in a tremendous release of energy.
- FISSIONABLE:** Capable of undergoing fission.
- FIVE PERCENTER:** One who undertakes to aid businessmen in obtaining contracts or doing other business with the government, usually for a fee of five per cent.
- FLAME-OUT:** A sudden blowing-out of the fire of a jet engine, caused by improper functioning of the fuel-supply system.
- FLIPOVER CARTRIDGE:** A phonograph cartridge that has separate needles for playing both microgroove and standard records and that may be turned to bring the proper needle into playing position.
- FLUFF:** To bungle or stumble in delivering one's lines during a performance; also, to miss a cue.
- FLUID DRIVE:** An automotive power coupling between the flywheel of the engine and the transmission gears that operates on a hydraulic turbine principle.
- FLUORIDATION:** Treatment of drinking water with a fluoride to prevent tooth decay.
- FLYING SAUCER:** Any of various unidentified objects, usually described as disc- or saucer-shaped, reportedly seen in the air.
- FOAM RUBBER:** A spongy, fine-textured rubber used especially for cushions, mattresses and the like.
- FOLD:** To discontinue production or business for lack of patronage or because of public neglect (as, the stage play *folded* after only two performances).
- FRAME OF REFERENCE:** The environment of personal knowledge or experience in which an idea is conceived or interpreted.
- FREELoader:** A "sponge"; one who frequently obtains something (as food or drink) that is paid for by someone else.
- FREEWAY:** An express highway that bypasses towns and is largely free of intersections; a superhighway.
- FREEZE:** To fix inflexibly, as by an executive order, at a given level or in the status on a given day (as, to *freeze* a price or a design).
- FREQUENCY MODULATION or FM:** A virtually static-free system of radio broadcasting in which the frequency of the carrier wave is modulated in accordance with the form of the sound or signal wave.
- FRINGE AREA:** An area on the outer edges of one having a greater strength or concentration (as, a *fringe area* for television reception).
- FRINGE BENEFIT:** Any benefit, such as health insurance or sick leave, not included in the basic wage, that workers receive from their employers.
- FROGMAN:** A person equipped for extended periods of underwater swimming, usually for military reconnaissance or underwater demolition.
- FRONT:** A person or group serving as public representative for a pressure group or subversive organization, often unwittingly, while thinking to act in public or patriotic interests.
- FUSED COLLAR:** A collar, especially one on a man's shirt, that has been lined or otherwise treated to retain its shape.
- GADGETEER:** An inventor or maker of gadgets; also, one given to buying or using them.
- GAGSTER:** A writer of gags or jokes, especially for radio and television programs.
- GAMMA GLOBULIN:** A fraction of blood plasma rich in antibodies and used against diseases such as polio and hepatitis.
- GAPA:** A rocket-powered guided missile used against aircraft and against other missiles;—from ground-to-air pilotless aircraft.
- GENOCIDE:** A calculated attempt to destroy systematically a racial, religious, or polit-

- ical group; also, an effort to destroy the language, religion, or culture of a group.
- GERIATRIC:** Of or pertaining to *geriatrics*, the branch of medicine dealing with old age and its diseases; also, aged (as, the *geriatric* patient).
- GHETTO:** A quarter of a city in which members of a racial group are segregated by social and legal pressure.
- GI:** A person who is serving or has served as an enlisted member of the U. S. armed forces.
- GIMMICK:** A trick; a clever or artful device or scheme.
- GISMO:** A gadget; device; contraption; also, anything without a name.
- GIVEAWAY:** A radio or television show in which members of the audience participate and receive prizes.
- GOBBLEDYGOOK:** Involved or obscure language such as is frequently found in official pronouncements.
- GOLDBRICK, slang:** To shirk or find excuses to evade assigned work.
- GOOFBALL, slang:** A sleeping tablet, especially one of the barbiturates.
- GOOGOL:** In mathematics, the figure 1 followed by 100 zeros.
- GRASSROOTS:** The farming districts of the country; also, the people living in them, thought of as a politico-economic group holding firm and independent views.
- GRAVEYARD SHIFT:** The third of three daily shifts, as in a factory, usually beginning at midnight.
- GREEN THUMB:** A special or unusual ability to make plants grow;—usually in the phrase, to have a *green thumb*.
- GREMLIN:** An impish gnome, whimsically accused by armen of tampering with motors, instruments, and the like.
- G SUIT:** An inflatable suit worn by aviators during rapid aerial maneuvers to counteract the effects on the body of pressure greater than gravity.
- GUIDED MISSILE:** Any missile whose course may be directed during passage by a built-in target-seeking device or by radio control.
- GUN:** To open the throttle of (an engine) to increase the speed.
- GYROPILOT:** A control mechanism, sometimes called *automatic pilot*, that keeps an airplane in level flight and on a set course.
- HALF-TRACK:** One of the endless chain-tracks used instead of the rear wheels on a certain type of vehicle; also, a tractor or truck with half-tracks and front wheels.
- HARDTOP:** An automobile having most of the characteristics of a convertible, but with a stationary steel top.
- HASSLE:** A mix-up; also, an argument or fight.
- H-BOMB or HYDROGEN BOMB:** An extremely powerful fusion bomb.
- HEDGEHOP:** To fly an airplane so low that it has to "hop" over trees and hedges.
- HELIPORT:** A place for helicopters to land in order to discharge or receive passengers or cargoes.
- HEPCAT:** A musician in a jazz band; also, a devotee of jazz.
- HEX:** A spell or enchantment; a jinx (as, to put the *hex* on someone).
- HIGH FIDELITY or HI-FI:** The reproduction of sound, usually by a radio or phonograph, with a high degree of faithfulness to the original.
- HIT PARADE:** A listing, as of popular songs or books, in order of current public preference.
- HOOD, slang:** A hoodlum; a rowdy.
- HOOPER or HOOPERATING:** An indication, based on the results of telephone polling, of the popularity of a radio or television program.
- HORSE'S TAIL = PONY TAIL, below.**
- HOT:** Radioactive; also, having to do with radioactive material (as, a *hot* laboratory).
- HOT ROD, slang:** An out-of-date automobile with the trimmings stripped off and the engine stepped up to permit high speeds.
- HOWGOZIT CURVE:** A running graph of the progress of an aircraft flight, especially a transoceanic one.
- HUCKSTER:** One whose business is commercial advertising, especially the preparation of clever, effective advertising programs for radio and television broadcasts.
- HYBRID CORN:** A crossbreed of Indian corn developed from selected strains and having the best characteristics of each.
- HYDROPONICS:** The growing of plants, especially vegetables, with their roots in water that contains the essential minerals, instead of in soil.
- HYPERTENSION:** Abnormally high arterial blood pressure; also, the resulting systemic condition.
- INFLUENCE PEDDLER:** One who tries to get special privileges, especially from the government, for his clients; a five-percenter.
- IN-SERVICE:** Taking place or continuing while in service (as, *in-service* training).
- INSTITUTE:** A short program of instruction or conferences for people already at work in a given field (as, a farmers' *institute* or a bankers' *institute*).
- INTERCOM:** A two-way short-distance communication system with microphones and loud-speakers at each end;—short for *intercommunication system*.
- IRON CURTAIN:** A barrier created by such means as censorship and prohibition of free travel to isolate Russian-controlled territory from outside contacts; hence, any similar barrier against communication.
- IRON LUNG:** A tank device for artificial respiration that forces air into and out of the patient's lungs.
- ISOBAR:** One of two atoms or elements having the same atomic weights but different atomic numbers.
- ISRAELI:** Of or relating to the Jewish state of Israel, in Palestine.
- ISSEI:** A Japanese immigrant to the U. S.; legally, an alien.
- JATO UNIT:** An auxiliary means of propulsion in which rocket engines are used to assist the take-off of an airplane;—from *jet* assisted take-off.
- JEEP:** A small, rugged multipurpose motor vehicle; originally one having four-wheel drive.

- JET PROPULSION:** Propulsion of a body by forces resulting from the rearward discharge of a jet (a high-speed stream of fluid) through an orifice. The forces are a reaction to the discharge of the jet, in accordance with the Newtonian law that to every force there is an equal and opposite reaction.
- JIVE:** The slang or jargon used by swing musicians and jitterbugs; also, any similar slang.
- JUKEBOX:** A coin-operated automatic phonograph-record player.
- JUNKIE, slang:** A narcotics user or addict.
- KEYNESIAN:** Of or pertaining to a system of economics (often associated with the New Deal) advocating considerable government participation in the economic affairs of a country.
- KICKBACK:** The return of part of a sum received, as of wages or fees, prompted by a previous confidential agreement or by coercion.
- KINESCOPE:** A form of cathode-ray tube with a screen at one end on which television pictures or oscillographs may be produced;—called also *picture tube*.
- KINESICS:** The study of such body motions as winks and waves as related to communication between people.
- KNOW-HOW:** Technical skill and practical ability; competence in planning or producing something.
- LANDING CRAFT:** Any of numerous naval warcraft designed for putting ashore troops or equipment in beach assaults.
- LATCH ON TO:** To attach oneself; also, to appropriate; to take over.
- LEFTIST:** One who belongs to a radical or revolutionary party; also, one who holds or advocates ultraliberal principles.
- LEPROMIN TEST:** A test for the recognition of immunity to leprosy.
- LIBRETTO:** The plan or scenario for a ballet.
- LIQUIDATE:** To kill secretly; also, to eradicate ruthlessly.
- LOAFER:** A man's or woman's low leather step-in shoe, resembling a moccasin but having a flat heel and stiff outsole.
- LOBOTOMY:** A leucotomy; an incision into the frontal lobe of the brain to sever nerve fibers in an attempt to relieve certain mental disorders.
- LOCKER PLANT:** A business establishment having quick-freezing equipment and lockers for storing frozen foods.
- LONGHAIR:** Idealistic; intellectualized; high-brow (as, *longhair* music or *longhair* writing).
- LOYALTY OATH:** A signed statement of loyalty, often one in which the signer affirms loyalty to the U. S. and denies any Communist connections or sympathies.
- LYSENKOISM:** A biological doctrine advanced by T. D. Lysenko, Russian agronomist, in defiance of orthodox genetics.
- MAE WEST:** A yellow life-saving jacket that can be inflated by two cartridges of carbon dioxide, worn especially by airmen in flights over water.
- MEGADEATH:** One million deaths (as, the power of an atomic bomb may be indicated in terms of *megadeaths*).
- MEGATON:** A million tons; also, an explosive force equal to that of a million tons of TNT;—used especially with reference to a hydrogen bomb.
- MERCY KILLING:** Euthanasia; killing, especially in a quick, painless manner, to put the victim out of extreme pain or misery.
- ME-TOO-ISM:** The echoing of another's opinions or attitudes, usually implying an inability or unwillingness to think for oneself.
- MICROFILM:** A strip of film on which a reduced-size photographic record of printed matter may be kept in a small space.
- MICROGROOVE:** A narrow V-shaped groove used on phonograph records intended to play at speeds of 33 1/3 or 45 revolutions per minute.
- MIDDLEBROW:** Middle-class; midway between highbrow and lowbrow.
- MILK BAR:** A place where milk, ice cream, and other dairy products are sold and may be consumed.
- MOBILE:** A delicately balanced type of sculpture, usually having movable parts which can be set in motion by air currents or other means.
- MOLOTOV COCKTAIL:** A crude explosive device, typically, a gasoline-filled bottle capped with an oil-soaked rag that is ignited just as the bottle is thrown at the target.
- MOMISM:** A supposed excessive admiration and sentimentalizing of mothers, thought to permit a possessive mother to deny her offspring emotional independence.
- MONITOR:** To check (a radio or television transmission) for quality or fidelity to band; also, to check (as a broadcast) for military or political significance.
- MONOLITHIC:** Consisting of one large, undifferentiated whole, exhibiting one harmonious pattern throughout (as, a *monolithic* party or culture).
- MONTAGE:** The production of one complete picture by combining several distinct ones, often in such a way that they blend with or into each other.
- MORETIC:** Pertaining to mores or social conventions.
- MOTEL:** A hotel or group of furnished cabins or attached cottages, situated near a highway, offering accommodations to automobile tourists.
- MOTHBALL:** That which has been placed in indefinite, protective storage (as, a *mothball* fleet or airplane).
- MOTORCADE:** A parade or procession of automobiles.
- MOTOR POOL:** A group or fleet of motor vehicles for use as needed by different organizations or individuals.
- MULTIPHASIC:** Having or considered in terms of many aspects or phases (as, a *multi-phasic* approach to a problem).
- MUSCULAR DYSTROPHY:** A hereditary disease in which there is progressive wasting away of the muscles.
- NAPALM:** A thickener used to gel gasoline for incendiary bombs and flame throwers.
- NEEDLE:** To vex or annoy by repeated sharp gibes; also, to goad or prod.

NEWSCASTER: One who broadcasts news, as on radio or television; also, a commentator.

NIACIN: A member of the B-vitamin group useful in the prevention of pellagra;—called originally *nicotinic acid*.

NISEI: A U. S. citizen born of Japanese immigrant parents.

NONOBJECTIVE: In art, creating effect through shapes and colors not intended to represent actual objects; abstract.

NO-SHOW: A passenger who, after making a reservation on an airplane, does not show up to claim it at flight time and has made no cancellation.

NUCLEAR: Having to do with the atomic nucleus (as, *nuclear physics*).

NURSERY SCHOOL: A center for children, usually under 5 years of age, providing supervised play and social training for a few hours a day.

NYLON: A synthetic material that can be fashioned into tough, strong, elastic threads and used in making brush bristles, hosiery, textile fabrics and the like.

OCCUPATIONAL THERAPY: The treatment of disease or injury by giving the patient regulated work that will help his recovery or rehabilitation.

OMNIBUS: A book of reprints, usually one containing works of the same type or by a single author.

OPPOSITE NUMBER: A person or position in one system corresponding to one in another (as, an ensign is the *opposite number* of a second lieutenant).

OSCAR: One of the statuettes awarded annually for highest excellence in motion picture work; hence, any annual award for excellence.

PACKAGE: A fully constructed, prearranged program or plan, such as a radio show or tour, usually offered for sale at a flat sum; also, any finished product made ready for immediate use by preassembling all essential elements into a unit.

PAN: To move (a camera) in order to follow a moving object or secure a panoramic effect.

PANIC SWITCH: The control on the ejector mechanism that throws a jet pilot from his plane in case of emergency.

PARAPSYCHOLOGY: A branch of psychology concerned with investigating evidence for telepathy, clairvoyance, and the like, and with experiments in the field of extrasensory perception.

PARA-RESCUE TEAM: A team of rescuers who drop by parachute, as to the scene of a plane crash, in order to give immediate aid to anyone in distress.

PARITY: The balance between the prices the farmer receives for his products and the prices he has to pay for the things he must buy.

PARTISAN: A member of a guerilla band working behind enemy lines and engaged in such activities as sabotage, demolition, and diversionary attacks.

PARTY DISCIPLINE: The discipline imposed on its members by a party;—usually applied to the Communist party.

PARTY LINE: The policy or course of action

followed by a party, originally specifically by the Communist party.

PATCH TEST: A test for determining susceptibility, made by applying to the skin small pads soaked with the allergy-producing substance in question.

PEDAL PUSHERS: Women's trousers, usually calf-length, for sports wear.

PENICILLIN: An antibacterial substance extracted from green mold, useful in treating infections.

PERIL POINT: The lowest rate to which a tariff can be reduced without injuring the industry of the country levying it.

PHOTOMURAL: An enlarged photograph, usually several yards long, affixed to a wall as decoration.

PICTURE TUBE = KINESCOPE.

PICTURE WINDOW: An extra-large window, usually in a living room, framing a desirable outside view.

PIGGY-BACK PLANE: A small airplane carried aloft on the "back" of a larger one, from which it is released in mid-air.

PIPE: In radio and television, to transmit (a program) by wire or coaxial cable.

PIZZA: A large flat tart made of bread dough spread with pieces of tomato, cheese, and shreds of meat, anchovies or the like, flavored with herbs, and baked thoroughly.

PIZZERIA: A restaurant or bakery where pizzas are made and sold.

PLATTER: A phonograph record.

PLUNGING NECKLINE: A very deep V-neckline in women's apparel.

PLUSH: Luxurious; over-elegant (as, a *plush* summer resort).

POLICE STATE: A totalitarian state having repressive government control of radio, press, culture, and economic and political life.

POLITIC: To campaign for political office; also, to seek to further a special end.

POLLEE: One who is questioned in or gives answers for a poll.

POLO SHIRT: A close-fitting pullover jersey or sport shirt of cotton knitwear, originally patterned after jerseys worn by polo players.

PONY TAIL: A hairdo for women, in which the hair is drawn back tightly from the face and up from the neck, and tied.

POODLE CUT: A very short, curly hairdo for women, in imitation of a poodle's coat.

POP: Short for *popular*;—used especially of music other than classical.

PORTAL-TO-PORTAL: Pertaining to the time a workman spends traveling from the portal or gate of company property to his actual place of work and in returning at the end of the work shift.

PREFAB: A prefabricated house or structure, construction of which consists merely of assembling and uniting standardized parts.

PRESSING: A phonograph record made from a matrix; also, the whole number of such recordings made at a single time.

PRESSURE GROUP: A minority group that brings pressure to bear on legislators or public opinion, often by lobbying or use of propaganda, to force legislation or change public policy.

- PRESSURE SUIT:** A suit worn by pilots flying at high altitudes, which inflates automatically when pressure inside the plane is lost.
- PRESSURIZE:** To maintain near-normal atmospheric pressure inside (the sealed cabin of an airplane) during high-level flight.
- PRIVATE EYE:** A private detective.
- PROFILE:** A vivid, concise biographical sketch; also, a concise analysis of any subject.
- PROXIMITY FUZE:** A device for making a projectile explode near the target.
- PSYCHODRAMA:** A spontaneous drama in which the actors exhibit their natural psychological reactions to a given situation, used especially in treating the mentally ill.
- PSYCHOMETRICS:** A branch of psychology that deals with the use and application of mental measurement; also, the technique of such measurement.
- PSYCHOSOMATIC:** Of or pertaining to the influence of mental factors on bodily disorders.
- PUBLIC RELATIONS:** The activities of a corporation, government, or other organization in building and maintaining good relations with the general public or with special groups.
- PUNCH CARD:** A data card with punched holes in particular places, each having an assigned significance, used in certain automatic business machines.
- PURGE:** To rid (a state or party) of members suspected of disloyalty.
- PUSHOVER:** An opponent easily defeated or a victim incapable of effective resistance; also, any problem presenting no real difficulties.
- QUARTERBACK:** To direct; to make plans and give instructions for carrying them out.
- QUICK-FREEZE:** To freeze (food) so rapidly that the natural juices and flavor are preserved.
- QUICKIE:** Anything hastily prepared or made; anything done without much preparation.
- RABBIT EARS:** A small indoor television antenna composed of two rods projecting upward from a ball-base in the form of a V.
- RACISM:** The assumption that certain races are naturally superior to others; also, any doctrine or program based on such an assumption.
- RADAR:** A powerful radio detecting device capable of establishing the distance, altitude, and direction of motion of any object in the path of its beam.
- RADIANT HEATING:** The heating of a house or room by heat radiated from large surfaces, such as floors, walls, or baseboards, that have first been warmed by heating coils or hot-air ducts.
- RADIATION SICKNESS:** An illness that results from exposure to radiation, as in radiotherapy or an atom bomb explosion.
- RANCH HOUSE:** A one-story dwelling, usually with an informal interior plan and a low-pitched roof.
- REACTOR:** An arrangement of fissionable material designed for the production and control of a chain reaction;—called also *nuclear reactor* and *pile*.
- RECESSION:** A slowing down of commercial and industrial activity, less severe than a depression; also, a period of such slackening.
- RECONVERSION:** The process of converting (especially a war plant) back to the production of civilian goods.
- RED-BAITER:** One who baits, attacks, or harasses communists or radicals.
- REFRESHER:** Providing reinstruction after a period of inactivity or instruction designed to keep one abreast of new developments in a field (as, a *refresher* course in auto mechanics).
- RESISTANCE:** An organized underground movement in a conquered country made up of groups of fighters engaged in sabotage and secret operations against occupation forces;—often with *the*.
- REV:** To raise or lower the number of revolutions per minute;—originally, of an airplane motor.
- Rh FACTOR:** A factor present in the red blood cells of 85 per cent of white persons (Rh-positive) and absent in 15 per cent (Rh-negative), so called because discovered in the blood of *Rhesus* monkeys. Rh incompatibility is manifested by red cell destruction and occurs when the two types are mixed in one person, especially as in the infant of an Rh-positive father and Rh-negative mother.
- RHUBARB:** A heated argument or dispute, often one that takes place on the field during a baseball game.
- RIBOFLAVIN:** Vitamin B₂, the growth-promoting substance of the vitamin-B group.
- RIGHTIST:** In politics, a member of the right; a conservative or royalist.
- ROBOT BOMB:** A small, pilotless jet-propelled airplane, steered by a gyroscopic device and loaded with explosives, that falls as an aerial bomb when its fuel supply is gone.
- ROC:** An aerial bomb with a television apparatus that transmits information back to the bombardier, who may then correct his initial aim by remote radio control.
- ROCKET SHIP:** An aircraft propelled by rocket power.
- ROLLER DERBY:** A form of sport in which teams on roller skates race around a track.
- ROTATION:** The military system of exchanging individuals or units assigned to combat or arduous duties with personnel more comfortably situated.
- RUMPUS ROOM:** A room in a home, often in the basement, set apart and suitably furnished for games and recreation.
- RUPTURED DUCK:** The symbol of an eagle with wings outspread depicted in the discharge emblem for personnel of the U. S. armed services.
- RUSSIAN ROULETTE:** A game or act of bravado in which the "player" puts one cartridge into a revolver, aims it at himself, spins the cylinder, and pulls the trigger.
- SATELLITE:** A state or country politically

- and economically dominated by a more powerful neighboring one.
- SCAN:** In radar, to cause (a certain area) to be traversed by a directive beam.
- SCARE BUYING:** Sudden buying, often involving an overstocking, of certain goods because of the fear that they may become scarce or unobtainable.
- SCHMOE or SCHMO, slang:** A stupid person; a misfit; a jerk.
- SCIENCE FICTION:** Imaginative or fantastic fiction, dealing especially with such subjects as life in the future, interplanetary travel, and life on other planets.
- SCRATCH TEST:** A test for determining susceptibility, made by rubbing an extract of the allergy-producing substance into the skin.
- SCREEN:** To pass through a standardized test for sorting out candidates according to abilities or eliminating the unfit; hence, to examine or select methodically.
- SCREWBALL:** Someone whose ideas or actions are crazy or fantastic; also, anything ridiculously absurd or zany.
- SCRIPTER:** A writer of scripts, as for movies, radio, or television.
- SEND:** In swing music, to perform with or inspire to spontaneous improvisations; also, to play so as to elate a listener.
- SHAKEOUT:** A moderate slowing down of commercial and industrial activity with a decrease in prices and employment, usually regarded as a readjustment toward normal after a period of inflation.
- SHARP, slang:** Conspicuously attractive; in keeping with the latest styles, as of clothing or speech.
- SHOCK THERAPY:** Treatment of mental disorders by means of a coma induced artificially by the administration of drugs or electric shock.
- SHOOTING WAR:** Conflict involving actual participation of armed forces in combat, as opposed to a war of nerves or a propaganda war.
- SHOPPING CENTER:** A group of retail stores or other business places, sometimes in one building, and usually provided with a large parking lot.
- SIGNATURE:** A tune or sound effect used to identify a particular radio program or feature;—called also *theme*.
- SILK SCREEN PROCESS:** A stencil method in which a design is made on a fine-mesh silk screen and transferred to another surface by forcing pigment through the screen with a squeegee.
- SIMULCAST:** A simultaneous broadcast of a program by radio and television; also, a program thus broadcast.
- \$64 QUESTION:** The most baffling question in a given situation, often one that defies direct answer.
- SKIP-STOP:** Not stopping at all points (as, *skip-stop* elevator or subway service).
- SKYSWEEPER:** A radar-aimed anti-aircraft weapon.
- SKYTYPING:** A technique, similar to skywriting, in which seven equally spaced aircraft emit puffs of smoke to form the letters of a message.
- SLICK or SLICK PAPER:** A large-circulation magazine printed on glossy paper;—usually implies slightness of content and technical smoothness.
- SMAZE:** A combination of smoke and haze.
- SMEAR:** To defame or blacken the reputation of a person or group by name-calling or by maliciously spreading exaggerated charges or rumors.
- SMEAR CAMPAIGN:** A concentrated program of vilification and smearing.
- SNACK BAR:** A counter or bar at which light refreshments and lunches are sold or served.
- SNEAK PREVIEW:** An unannounced showing of a new motion picture, usually to determine audience reaction to it.
- SNOLLYGOSTER:** A rascal or an unscrupulous person, especially an unprincipled politician.
- SNOW:** Small, moving, bright or dark spots on a television screen, resulting from the same causes as static in radio.
- SOAP OPERA:** A daytime radio or television serial drama performed on a commercial program chiefly for housewives.
- SOCIALIZED MEDICINE:** Administration by a government or other organized group of medical and hospital services for all members of a class or all members of the population.
- SONAR:** An apparatus that detects the presence and location of submarines or other underwater objects;—from sound navigation and ranging.
- SOUFFLÉ:** Tiny multicolored beads of glass or metal, used for embroidery.
- SOUND CONDITIONING:** The control of sound, as in an auditorium, by eliminating unwanted noise and excessive reverberations.
- SOUP UP:** To step up the horsepower of a motor, as on an airplane or a jalopy.
- SPACE:** Popularly, the region beyond the earth's atmosphere, lying between and beyond the planets and the stars.
- SPACE MEDICINE:** A suggested branch of medicine which would try to study conditions of outer space and their effect on the human body.
- SPACESHIP:** An imaginary aircraft for interplanetary travel.
- SPEECH CLINIC:** A clinic for the diagnosis and correction of speech disorders.
- SPELUNKER:** One whose hobby is exploring and studying caves and underground phenomena.
- SPIV, slang:** One who contrives to make a living without working; a slacker.
- SPLINTER GROUP:** In politics, a group broken away from a larger, original organization.
- SPLIT-LEVEL HOUSE:** A house built on different levels, usually with the floor level of a single-story section about midway between the floor levels of an adjoining two-story section.
- SPOTTER:** A civilian who watches the sky to report and identify approaching aircraft.
- STATELESS:** Without a state or nationality, as a person who was a citizen of a country no longer in existence.
- STATESIDE:** Of, pertaining to, characteristic of, or coming from the continental U. S.

- (as, a transfer from Alaska to *stateside* duty).
- STATIONARY FRONT:** In meteorology, a boundary between two air masses which show little or no movement.
- STATION BREAK:** In radio and television, the pause in a program or between programs to permit stations to identify themselves.
- STATION WAGON:** A sedanlike automobile having a tail gate and back seats that can be removed or folded so the vehicle can be used for light trucking.
- STATISM:** Government control or direction of important aspects of the economic life of a citizen.
- STEREOPHONIC:** Of reproduced sound, giving the effect of coming from two or more directions.
- STOCK CAR RACING:** Automobile racing in which ordinary cars are used rather than specially constructed racers.
- STOCKPILE:** A reserve supply of any essential material accumulated and stored as a safeguard against a shortage.
- STORM COAT:** A tailored winter coat for men or women, usually having a heavy lining and a mouton collar, and often made of gabardine.
- STRAWHAT CIRCUIT:** A summer theater circuit, often including the more popular resort areas.
- STREPTOMYCIN:** A substance extracted from certain soil bacteria and used against the bacteria of certain diseases, as typhoid fever, tularemia, and tuberculosis.
- SULFA:** Of or belonging to a class of drugs that are related to sulfanilamide and have a destructive action against certain types of bacteria.
- SUPERHIGHWAY:** A highway consisting of four or more lanes, designed for fast-moving traffic.
- SUPERMARKET:** A large, departmentalized retail store, usually self-service, selling foods and other household merchandise.
- SUPERSONIC:** Designating a speed greater than that of sound (about 738 miles per hour); also, moving or capable of moving at such speed (as, a *supersonic* aircraft).
- SWING SHIFT:** The work shift between the day and night shifts in a factory operating on a 24-hour basis, usually from 4 p.m. to midnight.
- SYNC:** In motion pictures and television, short for *synchronize* or *synchronization*.
- TAKE-HOME PAY:** The remainder of a person's gross wages after deductions, as for income-tax withholding, retirement, and union dues, have been made.
- TAPE:** A magnetized ribbon on which sounds may be recorded.—To record (sounds) on such a ribbon.
- TELECAMERA:** A television camera.
- TELECAST:** A program broadcast by television.—To broadcast by television.
- THEATER-IN-THE-ROUND:** A theater so arranged that the action area is in the center and the audience is seated on all sides of it;—called also *arena theater*.
- THERMONUCLEAR:** Pertaining to the heat energy resulting from or connected with changes in the nuclei of atoms.
- THIAMINE:** A vitamin, also known as *vitamin B₁*, that prevents beriberi and certain kinds of neuritis.
- THOUGHT CONTROL:** Repressive control or domination of individual ideas and thinking by another person or group.
- THREE-DIMENSIONAL or 3-D:** Giving the illusion of depth or varying distances;—applied to pictures, especially stereoscopic motion pictures.
- TONE ARM:** The movable part of a phonograph that contains the sound box or pickup and permits the needle to follow the grooves in the record.
- TOP-DRAWER:** Of the highest or first order of rank, excellence or importance.
- TRACE ELEMENT:** A chemical element, usually a metal, essential in minute amounts to the welfare of a plant or animal.
- TRACKMOBILE:** A lightweight tractor used for moving railroad cars in a switchyard.
- TRANSISTOR:** An electronic device similar in use to the electron tube.
- TWEEDY:** Given to or fond of wearing tweeds;—usually implying a certain matter-of-factness, robustness or informality of manner.
- TWEETER:** A small loudspeaker that responds only to high sound frequencies and is used to reproduce sounds of high pitch.
- 2,4-D:** A white crystalline compound used as a weed killer.
- ULTRAHIGH FREQUENCY or U.H.F.:** In radio and television, any frequency in the range from 300 to 3000 megacycles.
- VEEP:** A vice-president.
- VERY HIGH FREQUENCY or V.H.F.:** In radio and television, any frequency in the range from 30 to 300 megacycles.
- VIDEO:** *Television*. Pertaining to or used in sending or receiving the image (as, *video* frequency). Contrasted with *audio*.
- VIDEOCAST:** A television broadcast.
- VIP:** A very important person; sometimes, one using an assumed name for security reasons.
- WALKIE-LOOKIE:** A portable, battery-operated television camera.
- WALKIE-TALKIE:** A compact, battery-operated transmitting and receiving radiotelephone that is carried like a knapsack and especially adapted for communication in the field.
- WATER SKIS:** Wide skis towed by a fast motorboat and ridden like a surfboard.
- WEEDICIDE:** Any weed killer, especially a chemical one, as 2,4-D.
- WELFARE STATE:** A state that, by its concern with public health, insurance against sickness and unemployment, and similar measures, assumes a large share of responsibility for the welfare of its citizens.
- WETBACK:** A person who enters the U. S. illegally from Mexico by wading or swimming the Rio Grande River.
- WHAMMY:** A curse or jinx (as, to put the *whammy* on a person).
- WITCH-HUNT:** A searching out of victims, especially liberals, professedly to expose them as disloyal or subversive, but actually to harass them for political reasons.

WOOFER: A loudspeaker, larger than a tweeter, that responds only to lower sound frequencies.

ZOOT SUIT: A suit of extreme cut, usually having a long jacket with broad shoulders, and high-waisted peg-top trousers.

Words Frequently Misspelled

(Here spelled correctly)

abbreviate	annul	bleach	commissary	cyclone
abeyance	annulment	bonnet	commission	cygnet
abolition	anomaly	bouillon	committee	cylinder
abridge	anonymous	boundaries	commodore	cylindrical
abscess	answer	bouquet	comparable	
absence	antechamber	bourgeoisie	compatible	daffodil
absorption	antediluvian	brilliant	compel	dahlia
abstinence	antenna	browse	compelling	damage
abysmal	anticipate	bullion	complexion	dearth
abyss	antidote	bunion	compromise	debatable
accede	apologize	buoyancy	concede	debilitate
accelerate	apoplexy	bureaucracy	conceit	decadence
accessory	appalling	business	conceive	deceased
accidentally	apparatus		concomitant	deceitfully
acclaim	appreciation	cafeteria	concupiscence	deceive
accommodate	appurtenance	callously	concurrence	decision
accompaniment	argosy	calorie	condemn	defendant
accordance	argument	candacy	condescension	deference
accredit	arraign	cantaloupe	connoisseur	defiant
accumulate	ascend	canteen	conscience	definitely
accuracy	ascension	capitalize	conscious	delegate
achieve	ascertain	captaincy	conscious	delicacy
acknowledge	asinine	caress	consecrate	demise
acoustic	aspirant	carillon	consistent	denouement
acquaintance	assassinate	carriage	conscious	descendant
acquiescent	assistance	carrot	conspiracy	desecrate
acquire	association	cartilage	constituency	desiccate
acquisitive	assurance	casualties	constituent	despair
acquit	attendance	ceiling	consulate	desperate
acrimony	attenuate	cemetery	contaminate	despicable
across	attorney	chalet	contemptible	despise
adaptation	audible	challenge	contemptuous	despondent
addition	audience	chamois	contentious	detachable
address	autumn	champagne	continually	deterrent
adept	auxiliary	changeable	controversy	development
adequacy	azalea	character	convalescent	diabetes
adolescence		chauffeur	convenient	diaphragm
adventitious	babyhood	chemise	convertible	dictionary
advocacy	bacchanalia	cherub	cooling	diesel
affable	bachelor	chicory	cordially	different
aggravate	baggage	chief	corollary	diffident
aggregate	banana	chilblain	correlate	dilapidated
aggressive	barbecue	chivalrous	counterfeit	dilatory
aghost	barbiturate	choosing	counterrevolution	dilemma
align	battalion	chronicle		dilettante
alleged	believe	chrysanthemum	courageous	diligent
allegiance	beneficiary	cipher	courteous	dimension
allotment	benefited	circuit	court-martial	dimity
all right	benign	circumstantial	crescent	dining room
allure	bereave	civilize	critically	diphtheria
amateur	besech	civilly	crochet	diplomacy
amenable	beverage	clumsily	croquet	disappear
analogous	bibliography	coarsen	cruelty	disappoint
analysis	bicycle	cocoa	cunning	disapprove
annals	biennial	codicil	curriculum	disastrous
annihilate	bigoted	column	cursory	discern
annually	bilious	coming	custodian	discipline
annuity	blasphemous	commencement	customary	disconsolate

discrepancy	equally	gauze	indefatigable	legendary
discretion	equipped	genealogy	indefeasible	legitimate
disdain	erratic	genre	indefensible	leisure
disillusion	especially	ghastly	indelible	leprosy
disinter	ethereal	gibber	independence	lettuce
disparage	evanescent	giblets	indict	liable
disperse	eventually	gingham	indigenous	librarian
dissatisfaction	evidently	gizzard	indiscriminate	ligament
dissemble	evilly	globule	indispensable	likelihood
dissenter	exaggerate	government	individuality	limousine
dissimilar	exasperate	gradient	invisible	liquor
dissipate	exceed	grammar	inexhaustible	litany
dissolve	excel	grateful	infallible	livelihood
distention	excellent	gratitude	influent	loathe
divine	exception	grievous	inimical	loneliness
dizziness	excerpt	grimace	innate	lonely
dizzy	excess	gruesome	innocuous	loosely
dogged	excessive	guaranteed	inoculate	lunacy
domain	excise	guidance	insensate	luscious
domicile	excitement		inseparable	
dormitory	excrescence	haggle	insistence	mackerel
dotage	execrable	hallucination	intellectually	mackintosh
doughnut	exhaust	handkerchief	intercede	maddening
dour	exhibit	harass	interpret	maggot
duly	exhilarate	harness	interracial	maintenance
dutiable	exhort	heifer	interrupt	malaria
dutiful	exhume	height	intimidate	manacle
	existence	heresy	introvert	maniacal
earnest	exorbitant	hideous	irreconcilable	manufacturer
eavesdropper	expedient	historically	irrefutable	marmalade
ebony	experience	hoary	irresistible	massacre
eccentric	extension	homogeneous	irrespective	mayonnaise
echoes	extenuate	horoscope	irreverent	measles
echoing	extinguish	hygiene	irrigate	mediocre
ecstasy	extraordinary	hypnotic	isosceles	mediocrity
edible	extravagant	hypocrisy		mellifluous
editor	exuberant	hypocrite	jaundice	metamorphosis
effervescent	exultant	hypocritical	jealousy	meteorology
efficiency		hysterically	jeopardy	millionaire
effigy	fallacy		jockey	mimicking
effusive	fallible	idiocy	jollity	mimicry
egress	fascinate	idiosyncrasy	journeyman	miniature
elder down	fiery	idolatrous	joviality	miscellaneous
eighth	filament	illegitimacy	jovially	mischievous
elegy	financier	illegitimate	jugular	misspell
elementary	fissure	illiterate		moccasin
eligible	flaccid	illogical	kaleidoscope	mortgage
eliminate	fluorescent	imaginary	khaki	mountaineer
emanate	forcible	imbecile	kiln	mountainous
embarrassment	foreboding	imitate	kimono	mulatto
emigrant	foresee	immaculate	kindergarten	murmur
eminent	forsythia	immeasurable	knead	mysterious
emphatically	fracas	immediately	knowledge	
emulate	fragility	immorality		naphtha
enable	frail	immune	laboratory	narcissus
encourage	friend	impeccable	labyrinth	nascent
endear	frivolous	impertinent	lacquer	naturally
endorse	fugue	implement	ladle	nausea
energetic	fulsome	improvise	ladylike	nauseous
enervate	functionary	incensed	language	necessarily
ennoble	fundamentally	incessantly	laryngeal	necessitate
entail		incidentally	larynx	niece
enumerate	gabardine	incise	lascivious	niggardly
enunciation	gagged	incongruous	latitude	ninth
envious	gamut	incorruptible	lattice	noncombatant
environment	garrulity	incredible	leaven	noticeable
equalize	gaseous	indebted	legacy	notoriety

obedience	pompous	referable	sanitarium	succeed
obeisance	pontiff	referee	sassafras	success
obligate	pontificate	reference	scandalous	succor
obscene	portrait	referendum	scenario	sufferance
obsession	possessive	refraction	scentless	superintendent
obstacle	possibility	rehearsal	schedule	supervise
obstinate	potatoes	relevant	schism	supplement
occasion	practicability	religious	scintillate	suppress
occurrence	precede	reminiscence	scourge	surfeit
oddity	precedence	renaissance	scurrilous	surfeited
offensive	precedent	renounce	scythe	surprise
official	precocious	renown	secede	surveillance
ominous	predecessor	renunciation	sedentary	susceptible
omission	preferable	repellent	seesaw	syllable
oneself	prejudice	repercussion	segregate	symbolically
operator	presence	repertory	seize	symmetrical
opportunity	presumptuous	repetitious	self-reliant	symmetry
opposite	prevalent	reprieve	sensitive	syphilis
optimist	primeval	rescind	sensual	systematically
origin	privilege	resemblance	sententious	
oscillate	probably	reservation	separate	taffeta
ostentatious	proceed	reservoir	serviceable	talisman
outrageous	professor	residual	severely	tariff
oxidize	promenade	resilient	shellacking	tattooing
	pronunciation	resistance	shield	technicality
palatable	propaganda	resonance	shriek	temperament
pamphlet	propeller	respectively	siege	temperature
panacea	protein	respite	sieve	tempestuous
phantomlike	pseudonym	responsible	significance	temporary
parallel	psychoanalysis	restaurant	similar	tenacious
parliamentary	psychology	resurrect	sirocco	tendon
paroled	ptomaine	retaliate	skein	tenement
parricide	publicly	retina	sleight	tension
participle	pursuit	retrieve	sleigh ride	tentacle
particularly	pyramid	revelle	sleight of hand	testament
pastime		revelation	slimy	theirs
patience	quadruped	reverence	slovenly	thief
pavilion	quandary	reversible	sluggish	thoroughfare
pedant	quarantine	revolution	sluice	thousandth
pedestal	quarrelsome	rhapsody	smorgasbord	threshold
penicillin	quay	rhetorically	so-called	thunderous
perceive	querulous	rheumatic	soccer	timidness
perennial	queue	rhinestone	solder	timorous
peripatetic	quixotic	rhinoceros	solecism	tinselly
permissible	quizzes	rhedodendron	soluble	titillation
perseverance	quizzical	rhythm	solvable	tobacco
persistent		rickety	somersault	toboggan
personality	racketeer	ridiculous	sophisticated	tolerant
personnel	ragamuffin	righteous	souvenir	tomatoes
perspiration	railery	riotous	spacious	tonsillectomy
persuade	rapidity	riveter	spatial	tonsillitis
physician	ravenous	rueful	specimen	toque
pianos	realize	rummage	spigot	torrential
picnic	really	runaway	sponsor	tortoise
picnicking	rebus	rutabaga	squalid	tournament
piecemeal	recalcitrant		squalor	tourniquet
pierce	recede	sabotage	stabbing	trachea
pigsty	receipt	sachet	staccato	tradition
pilgrimage	receive	sacrament	statue	trafficking
pillory	recipe	sacrilicious	stoically	tragically
pinion	recipient	sacrilege	straightway	transcendent
piteous	recognition	sacrilegious	strait-laced	transept
playwright	recollect	sadism	stubbornness	transient
plebiscite	recommend	saffron	subsidize	transparency
pneumatic	recoup	salient	substantial	transubstantiation
pneumonia	recruit	sanatorium	subtle	trauma
	redolent	sanctuary	subtlety	tread

trek	tyrannical	untenable	vtrle	whooping cough
tremendous	tyranny	unwieldy	virtual	whore
trepidation	tyrant	upbraid	visiblity	wield
tributary		usually	visionary	withhold
tricycle	ukulele	utensil	vitality	witticism
triennial	ulcerous	utilize	vitaly	wizard
trollop	ultimate	utopia	voluminous	wondrous
trough	unadulterated		voluntarily	wooling
trousseau	unalloyed	vaccinate		worried
truant	unanimous	vacillate	warrior	worrying
truism	uncomplimen-	vacuum	weakling	wrapper
truly	tary	valet	weasel	wreak
tuberculosis	unconscionable	vanilla	weather vane	wrestle
tumultuous	unctuous	vegetable	weighing	
turpentine	undoubtedly	vehicle	weird	yacht
tussle	unexceptionable	venereal	welcome	yield
tweezers	unguent	vengeance	whalebone	
tycoon	unparalleled	vermillion	wheelde	zealous
typhoon	unprecedented	vigilance	whimsical	zoology
typical	unpredictable	villify	whirl	zwieback
typify	unrequited	villain	wholly	

Forms of Address

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Abbot. Address: The Right Reverend _____, Abbot of _____. Begin: Right Reverend and dear Father.

Alderman. Address: Honorable _____. Begin: Dear Sir.

Ambassador. Address: His Excellency, _____, Ambassador of _____ at _____. Begin: Sir; or Excellency.

Ambassador and his wife. Address: His Excellency, The _____ Ambassador and Mrs. _____. Begin: Your Excellencies.

Archbishop (Anglican). Address: The Most Reverend His Grace the Lord Archbishop of _____. Begin: My Lord Archbishop; or Your Grace.

Archbishop (Roman Catholic). Address: The Most Reverend _____, D.D., Archbishop of _____. Begin: Your Excellency.

Archdeacon. Address: The Venerable The Archdeacon of _____. Begin: Venerable Sir.

Army Officers. Address: The Commander in Chief, Army of the U. S.; or (use officer's rank) _____. U.S.A. Begin: Sir; or My dear General _____.

Assemblyman. Address: The Honorable _____, Member of Assembly; or Assemblyman _____. Begin: Sir; or My dear Mr. _____.

Assistant Secretary (Assistant to a Cabinet Officer). Address: Honorable _____, Assistant Secretary of _____. Begin: Sir; or Dear Mr. _____.

Associate Justice. Address: The Honorable _____, United States Supreme Court; or Mr. Justice _____. The Supreme Court. Begin: Mr. Justice; or Dear Justice.

Baron. Address: The Right Honourable Lord _____; or The Lord _____. Begin: My Lord.

Baroness. Address: The Right Honourable the Baroness _____; or The Lady _____. Begin: Madam.

Baronet. Address: Sir John _____. Bt. or Bart. Begin: Sir.

Baronet's wife. See Lady, below.

Baron's wife. See Baroness, above.

Bishop (Anglican). Address: The Right Reverend the Lord Bishop of _____. or The Lord Bishop of _____. Begin: My Lord Bishop; or My Lord.

Bishop (Methodist). Address: Reverend Bishop _____. Begin: Dear Sir; or My dear Bishop _____.

Bishop (Protestant Episcopal). Address: To the Right Reverend _____, Bishop of _____. Begin: Right Reverend and Dear Sir; or Dear Bishop _____.

Bishop (Roman Catholic). Address: The Most Reverend _____, Bishop of _____. Begin: Your Excellency; or Most Reverend Sir.

Cabinet Officers (U. S.). Address: The Honorable the Secretary of State (or Labor, etc.); The Secretary of State, etc. Begin: Sir; or My dear Mr. Secretary.

Canon. Address: The Very Reverend Canon _____; or The Very Reverend _____, Canon of _____. Begin: Very Reverend Canon; or Dear Canon _____.

Cardinal. Address: His Eminence John, Cardinal _____. Begin: Your Eminence.

Cardinal (if also an Archbishop). Address: His Eminence _____, Cardinal _____, Archbishop of _____. Begin: Your Eminence.

Chargé d'Affaires. Address: The Chargé d'Affaires of _____. or _____, Esq., Chargé d'Affaires. Begin: Dear Sir; or My dear Mr. _____.

Chief Justice of the U. S. Address: The Chief Justice of the U. S.; or The Chief Justice, The Supreme Court, Washington, D. C. Begin: My dear Mr. Chief Justice; or Sir.

Clergyman. Address: The Reverend _____; or (if doctor of divinity) The Rev. Dr. _____. Begin: Dear Sir; or Reverend Sir.

Clerk of Senate or House. Address: The Honorable _____, Clerk of _____. Begin: Sir; or Dear Sir.

Commissioner of Bureau. Address: The Honorable _____, Commissioner of the Bureau of _____. Begin: Sir; or Dear Sir.

Congressman. Address: Honorable James H. Smith, House of Representatives. Begin: Sir; or Dear Sir.

Consul. Address: To the American Consul at _____; or _____, Esq., American Consul at _____. Begin: Dear Sir.

Countess. Address: To the Right Honourable The Countess of _____. Begin: Madam.

Dame. Address: Dame _____. Begin: Madam.

Deacon. (Anglican and Protestant Episcopal). Address: The Reverend Deacon _____. Begin: Reverend Sir.

Dean (Ecclesiastical). Address: The Very Reverend the Dean of _____. Begin: Very Reverend Sir; or Sir.

Dean, Rural (Roman Catholic Church). Address: The Very Reverend _____, R.D., or V.F. Begin: Very Reverend Father.

Dean of a College or Graduate School. Address: Dean _____. Begin: Dear Sir; or Dear Dean _____.

Divorced woman. Address: Ordinarily use the maiden name with Mrs. Some divorced women prefer to resume the Miss.

Doctor of Divinity. Address: _____, D.D.; or Rev. Dr. _____. Begin: Dear Sir; or Dear Dr. _____.

Doctor of Philosophy, Laws, Medicine, etc. Address: _____, Ph.D. (LL.D.) (M.D.); or Dr. _____. Begin: Dear Sir; or Dear Dr. _____.

Dowager. See *Widow*, below.

Duchess. Address: Her Grace the Duchess of _____; or The Most Noble the Duchess of _____. Begin: Madam; or Your Grace;

Duchess of the Blood Royal. Address: Her Royal Highness The Duchess of _____. Begin: Madam; or May it please your Royal Highness.

Duke. Address: His Grace the Duke of _____; or The Most Noble the Duke of _____. Begin: My Lord Duke; or Your Grace.

Duke of the Blood Royal. Address: His Royal Highness The Duke of _____. Begin: Sir; or May it please your Royal Highness.

Earl. Address: The Right Honourable The Earl of _____; or The Earl of _____. Begin: My Lord.

Earl's wife. See *Countess*, above.

Envoy. Same as Minister (Diplomatic).

Esquire. Address: _____, Esq. Begin: Sir; or Dear Mr. _____. (Note.—Esq. is never used if the person is addressed by any other title, even Mr.)

Governor. Address: (In Mass. and by courtesy in some other states) His Excellency, The Governor of _____; or His Excellency _____; or (in other states of the U. S.) The Honorable the Governor of _____; or Hon. _____, Governor of _____. Begin: Sir; or Dear Sir.

Governor-General of Canada. Address: His Excellency The Right Honourable _____, (plus rank or title, if any). Begin: My Lord; or Sir.

Governor-General's wife. Address: Her Excellency _____. Begin: Madam.

Judge (U.S.A.). Address: The Honorable _____, U. S. District Judge. Begin: Dear Sir; or My dear Judge _____.

King. Address: The King's Most Excellent Majesty; or His Most Gracious Majesty, King _____. Begin: Sir; or May it please your Majesty.

King's Counsel. Address: To _____, Esq., K.C. Begin: Sir.

Knight. Address: Sir John _____ (initials of his order, if any, as K.C.B.). Begin: Sir.

Knight's wife. See *Lady*, below.

Lady. Address: Lady _____, or (if daughter of a baron or viscount) Hon. Lady _____; or (if the daughter of an earl, marquis, or duke) Lady Florence _____. Begin: Madam; or Your Ladyship.

Lawyer. Address: _____, Esq.; or Mr. _____, Attorney at Law. Begin: Dear Sir; or My dear Mr. _____.

Lieutenant Governor. Address: The Honorable _____, Lt. Governor of _____. Begin: Sir; or Dear Sir.

Maid of Honor. Address: The Honourable Miss _____. Begin: Madam.

Marchioness. Address: The Most Honourable the Marchioness of _____. Begin: Madam.

Marquis. Address: The Most Honourable the Marquis of _____; or The Marquis of _____. Begin: My Lord Marquis.

Mayor (in Canadian cities and towns, and English boroughs). Address: The Right Worshipful the Mayor of _____ (English); His Worship, The Mayor of _____ (Canadian). Begin: Sir.

Mayor (in the U. S.). Address: The Honorable _____, Mayor of _____; or The Mayor of the City of _____. Begin: Sir; or Dear Mr. Mayor.

Member of Parliament (or of a Provincial Legislative Council or Legislature, etc.) To the ordinary form of address add M.P. (or M.P.P.; or M.L.A., etc.). Begin: Sir.

Minister (Diplomatic). Address: The Honorable _____, Minister of _____. Begin: Sir; or My dear Mr. Minister.

Minister (Religious). See *Clergyman*, above.

Moderator (Presbyterian Church). Address: The Right Reverend _____. Begin: Right Reverend Sir.

Monsignor. Address: The Right Reverend Monsignor _____. Begin: Right Reverend and dear Monsignor.

- Mother Superior of a Sisterhood.** Address: The Reverend Mother Superior, Convent of _____; or Reverend Mother _____, O.S.D. (or other initials of the order). *Begin:* Reverend Mother; or Dear Madam.
- Naval Officers.** Address: The Admiral of the Navy of the U. S.; or Captain _____, U.S.N. *Begin:* Sir; or Dear Commander _____; but for officers below the rank of commander, Dear Mr. _____.
- Nun.** See *Sister of a Religious Order*, below.
- Papal Nuncio or Internuncio or Apostolic Delegate.** Address: His Excellency, The Papal Nuncio (or Internuncio or Apostolic Delegate) to _____. *Begin:* Your Excellency.
- Patriarch (Eastern Church).** Address: His Beatitude the Patriarch of _____; or His Beatitude the Lord _____, Patriarch of _____. *Begin:* Most Reverend Lord; or Your Beatitude.
- Pope.** Address: To His Holiness Pope _____. *Begin:* Most Holy Father; or Your Holiness.
- President of a College or University.** Address: _____, LL.D. (or if he is not an LL.D., use the initials of his highest degree), President of _____ University; or President, _____ University. If he is a clergyman, address as Reverend _____. *Begin:* Dear Sir; or Dear President _____.
- President of a Theological Seminary.** Address: The Rev. President _____. *Begin:* Dear Sir; or Dear President _____.
- President of State Senate.** Address: The Honorable _____, President of the Senate of _____. *Begin:* Sir.
- President of the Senate of the U. S.** Address: The Honorable, The President of the Senate of the U. S.; or The Honorable _____, President of the Senate. *Begin:* Sir.
- President of the U. S.** Address: The President, The White House; or His Excellency, The President of the U. S. *Begin:* Mr. President; or The President; or My dear Mr. President.
- Priest (Roman Catholic Church).** Address: Reverend _____, O.S.M. (or other initials of his order). *Begin:* Dear Father _____ (religious name).
- Prime Minister of Canada.** Address: The Right Honourable _____, P.C., Prime Minister of Canada. *Begin:* Sir.
- Prince of the Blood Royal.** Address: His Royal Highness Prince _____. *Begin:* Sir.
- Prince of Wales.** Address: His Royal Highness The Prince of Wales. *Begin:* Sir; or May it please your Royal Highness.
- Princess of the Blood Royal.** Address: Her Royal Highness the Princess _____ (Christian name). *Begin:* Madam.
- Privy Councillor (British Imperial).** Address: To the Right Honourable _____, P.C. *Begin:* Sir. Note.—If other titles are used, they should come after *The Right Honourable*; as, The Right Honourable Sir John _____.
- Privy Councillor (of Canada).** Address: The Honourable _____. *Begin:* Sir.
- Professor in a College or University.** Address: Professor _____, or _____, Ph.D. (or LL.D., M.D., etc., using only the initials of his highest degree, if the degrees are in the same field), Professor of _____. *Begin:* Dear Sir; or My dear Professor.
- Professor in a Theological Seminary.** Address: The Reverend Professor _____. *Begin:* Dear Sir; or Dear Professor _____.
- Queen.** Address: The Queen's Most Excellent Majesty; or Her Gracious Majesty, The Queen. *Begin:* Madam; or May it please your Majesty.
- Queen Mother.** Address: Her Gracious Majesty Queen _____. *Begin:* Madam; or May it please your Majesty.
- Rabbi.** Address: Rabbi _____. *Begin:* Reverend Sir; or My dear Rabbi _____. (If he holds a doctor's degree, Dr. may be substituted for Rabbi.)
- Rector of a Religious House or of a Seminary.** Address: The Very Reverend _____, O.S.B. (or other initials of order), Rector, Brothers of St. Francis. *Begin:* Very Reverend and dear Father (or Brother).
- Representative.** See *Congressman*, above.
- Senator (U. S.)** Address: The Honorable _____, the U. S. Senate, Washington, D. C. *Begin:* Dear Sir; or My dear Senator.
- Sister of a Religious Order.** Address: Sister _____, (followed by the initials of the order). *Begin:* Dear Sister; or My dear Sister _____.
- Speaker of the House of Commons (Canada).** Address: The Honourable _____, The Speaker of the House of Commons. *Begin:* Dear Mr. Speaker.
- Speaker of the House of Representatives of the U. S.** Address: The Honorable _____, Speaker of the House of Representatives. *Begin:* Sir; or My dear Mr. Speaker.
- State Senator.** Like Senator (U. S.).
- Undersecretary of State (U.S.A.).** Address: The Undersecretary of State; or The Honorable _____, Undersecretary of State. *Begin:* Sir; or Dear Mr. _____.
- Vice-President.** Address: The Vice-President; or The Honorable _____, Vice-President of the U. S. *Begin:* Mr. Vice-President; or Sir.
- Viscount.** Address: The Right Honourable the Viscount _____. *Begin:* My Lord.
- Viscountess.** Address: The Right Honourable the Viscountess _____. *Begin:* Madam.
- Widow.** Address: Ordinarily address by her former title; as, Mrs. John Smith, not Mrs. Mary Alice Smith, unless the latter form is preferred by the person herself.

THE UNITED STATES



STATES, TERRITORIES AND CITIES

(State flower, bird, etc. are official unless otherwise indicated; dates in parentheses are those of adoption. Area is total of land and inland water. Estimated population figures for 1956 are as of July 1 and are provisional. Largest cities include incorporated places only.)

ALABAMA

Capital: Montgomery.
Governor: James E. Folsom, Dem. (to Jan. 1959).
Organized as territory: Mar. 3, 1817.
Entered Union & (rank): Dec. 14, 1819 (22).
Seceded from Union: Jan. 11, 1861.
Re-entered Union: July 13, 1868.
Present constitution adopted: 1901.
Motto: *Audemus jura nostra defendere* (We dare defend our rights).
State flower: Goldenrod (1927).
State bird: Yellowhammer (1927).
State song: "Alabama" (1931).
Nickname: Yellowhammer State.
Origin of name: Disputed. May come from Choctaw meaning "thicket-clearers" or "vegetarian-gatherers."
1940 population & (rank): 2,832,961 (17).
1950 population & (rank): 3,061,743 (17).
1956 estimated population: 3,135,000.
Area & (rank): 51,609 sq. mi. (28).
Geographic center: In Chilton Co., 12 mi. SW of Clanton.
Number of counties: 67.
Largest cities (1950 Census): Birmingham (326,037); Mobile (129,009); Montgomery (106,525); Gadsden (55,725); Tuscaloosa (46,396).
State forests: 6 (14,248.58 ac.).
State parks: 34 (39,619.6 ac.).
State general revenue (1955-56): \$324,652,145.
State general expenditure (1955-56): \$349,371,996.

Alabama is the leading heavy-industry state in the South. Textiles, iron and steel, and sawmill products lead its manufacturing, which centers around the "Pittsburgh of the South"—Birmingham. Industry is growing rapidly in other areas, including the Tennessee River Valley, with its great Muscle Shoals power plant. Lumber, marble, dolomite and petroleum are other important products. Alabama ranks high in the production of cotton, cattle, corn, hay, nuts, broiler chickens and sweet potatoes.

At Tuskegee Institute, founded by Booker T. Washington, Dr. George Washington Carver carried out his famed agricultural research.

The Confederacy was founded at Montgomery in Feb. 1861, and for a time the city was the Confederate capital.

In 1540, Hernando de Soto and his treasure seekers were the first white men to see the state, although Cabeza de Vaca may have preceded him in 1528.

ARIZONA

Capital: Phoenix.
Governor: Ernest W. McFarland, Dem. (to Jan. 1959).
Organized as territory: Feb. 24, 1863.
Entered Union & (rank): Feb. 14, 1912 (48).
Present constitution adopted: 1911.
Motto: *Ditat Deus* (God enriches).
State flower: Flower of saguaro cactus (1931).
State bird: Cactus wren (1931).
State colors: Blue and old gold (1915).
State song: "Arizona," a march song (1919).
State tree: Palo Verde (1957).
Nickname: Grand Canyon State.
Origin of name: From the Indian "Arizonac," meaning "little spring."
1940 population & (rank): 499,261 (43).
1950 population & (rank): 749,587 (37).
1956 estimated population: 1,080,000.
Area & (rank): 113,909 sq. mi. (5).
Geographic center: In Yavapai Co., 55 mi. SE of Prescott.
Number of counties: 14.
Largest cities (1950 Census): Phoenix (106,818); Tucson (45,454); Mesa (16,790); Douglas (9,442); Yuma (9,145).
State forests: None.
State parks: None.
State revenue (1955-56): \$189,727,473.
State expenditure (1955-56): \$182,383,245.

Agriculture is Arizona's largest revenue-producing industry. By means of irrigation, its once arid acres produce alfalfa, cotton, wheat, sorghum, vegetables, citrus fruits and dates. Income from livestock ranks high from both range and feeder cattle.

Mining of copper, gold, vanadium, uranium and silver ranks next among the industries, the production of copper exceeding that of any other state. Smelting and refining are leading activities.

Phoenix, its largest city, is both a popular health resort and a busy shipper of cotton and vegetables. Douglas loads cattle and smelts copper.

With the Hopi, Navajo (the largest in numbers) and Apache tribes, Arizona has the largest U. S. Indian population, spread over fourteen reservations. It also has some of the country's most famous scenery. In the north is the Grand Canyon; in the east are located the Petrified Forest and Painted Desert.

Marcos de Niza, a Franciscan friar, entered the state in 1539 in search of the mythical Seven Cities of Cibola, and was followed a year later by Coronado.

ARKANSAS

Capital: Little Rock.
 Governor: Orval Faubus, Dem. (to Jan. 1959).
 Organized as territory: Mar. 2, 1819.
 Entered Union & (rank): June 15, 1836 (25).
 Seceded from Union: May 6, 1861.
 Re-entered Union: June 22, 1868.
 Present constitution adopted: 1874.
 Motto: *Regnat populus* (The people rule).
 State flower: Apple Blossom (1901).
 State tree: Pine (1939).
 State bird: Mockingbird.
 State song: "The Arkansas Traveler" (1949).
 Nickname: Land of Opportunity.
 Origin of name: From the Quapaw Indians.
 1940 population & (rank): 1,949,387 (24).
 1950 population & (rank): 1,909,511 (30).
 1956 estimated population: 1,815,000.
 Area & (rank): 53,102 sq. mi. (26).
 Geographic center: In Pulaski Co., 12 mi. N of W of Little Rock.
 Number of counties: 75.
 Largest cities (1950 Census): Little Rock (102,213); Fort Smith (47,942); North Little Rock (44,097); Pine Bluff (37,162); Hot Springs (29,307).
 State forests: None.
 State parks: 11 (18,380 ac.).
 State general revenue (1951): \$101,207,000.
 State general expenditure (1951): \$99,000,000.

About 90 per cent of the nation's bauxite—the source of aluminum—comes from the earth of Arkansas, which also contains North America's only known diamond mine, located in Pike County near Murfreesboro, and presently used as a tourist attraction on a "finders-keepers" basis.

The state is almost equally divided between mountains and delta areas. Arkansas has an equable southern climate and fertile central valleys which grow cotton, rice, wheat, corn, oats, potatoes and fruit. Other industries are oil production, lumbering and production of whetstones and antimony ore.

Hot Springs entertains fifteen times its population in guests each year. Its forty-seven famous curative mineral springs, the only ones administered by the Federal Government, are in Hot Springs National Park in the Ouachita Mountains. Pine Bluff has the largest archery factory in the country.

CALIFORNIA

Capital: Sacramento.
 Governor: Goodwin J. Knight, Rep. (to Jan. 1959).
 Entered Union & (rank): Sept. 9, 1850 (31).
 Present constitution adopted: 1879.
 Motto: *Eureka* (I have found it).
 State flower: Golden poppy (1903).
 State tree: California redwoods (*Sequoia sempervirens* & *Sequoia gigantea*) (1937 & 1953).
 State bird: California valley quail (1931).
 State animal: California grizzly bear (1953).
 State fish: California golden trout (1947).
 State insect: California dog-face butterfly (unofficial).
 State colors: Blue and gold (1951).
 State song: "I Love You, California" (1951).
 Nickname: Golden State.
 Origin of name: From a book, *Amadis de Gaula*, by Garcia Ordóñez de Montalvo, c. 1500.

1940 population & (rank): 6,907,387 (5).
 1950 population & (rank): 10,586,223 (2).
 1956 estimated population: 13,600,000.
 Area & (rank): 158,693 sq. mi. (2).
 Geographic center: In Madera Co., 35 mi. NE of Madera.
 Number of counties: 58.
 Largest cities (1950 Census): Los Angeles (2,104,663); San Francisco (798,000); Oakland (397,000); San Diego (434,924); Long Beach (262,000).
 State forests: 8 (70,235 ac.).
 State parks and beaches: 147 (600,000 ac.).
 State general revenue (Est. 1956-57): \$1,840,378,000.
 State general expenditure (Est. 1956-57): \$1,828,385,000.

California earns more money from raising food and catching fish than any other state, and it stands high in oil production, lumbering and manufacturing. It has more motor vehicles than any other state or any foreign country. Out-of-state tourist visitors and the travel and recreation expenditures of the state's residents continue to play an important part in the expansion of trade and employment opportunities. Irrigation makes possible the production of more than 200 commercial crops.

Nature is spectacular. Death Valley, in the southeast, is 282 feet below sea level, the lowest spot in the nation; Mt. Whitney, a 14,495-foot peak, is the highest point in the U. S.; Lassen Peak is the only active U. S. volcano although its last eruptions were recorded in the years from 1914 to 1917; and the General Sherman Tree in Sequoia National Park is estimated to be about 3,500 years old. San Pedro is the world's largest man-made harbor, and the Bank of America National Trust and Savings Association, operated and owned by the Giani-nini family, is the largest privately owned bank in the world.

Gold, which was responsible for the state's settlement boom, is still found here, but the state's most important mineral products today are oil, natural gas and natural gas liquids, cement, liquefied petroleum gases, miscellaneous stones, salines, iron ore and tungsten.

California is a leader in electrical energy, and its cities specialize in airplane making, lumber and wood products, printing and publishing, apparel and machinery manufacturing, motor-vehicle production and food processing.

California's 4 national parks are great tourist attractions, and the San Francisco-Oakland and Golden Gate bridges are among the world's engineering marvels.

Juan Rodríguez Cabrillo, Portuguese navigator, was probably the first white man to see the state in 1542.

COLORADO

Capital: Denver.
 Governor: Stephen L. R. McNichols, Dem. (to Jan. 1959).
 Organized as territory: Feb. 28, 1861.
 Entered Union & (rank): Aug. 1, 1876 (38).

Present constitution adopted: 1876.

Motto: *Nil sine Numine* (Nothing without Providence).

State flower: Rocky Mountain columbine (1899).

State tree: Colorado blue spruce (1939).

State bird: Lark bunting (1931).

State colors: Blue and white (1911).

State song: "Where the Columbines Grow" (1915).

Nickname: Centennial State.

Origin of name: From the Spanish, meaning "red."

1940 population & (rank): 1,123,296 (33).

1950 population & (rank): 1,325,089 (34).

1956 estimated population: 1,612,000.

Area & (rank): 104,247 sq. mi. (7).

Geographic center: In Park Co., 30 mi. NW of Pikes Peak.

Number of counties: 63.

Largest cities (1950 Census): Denver (415,786);

Pueblo (63,685); Colorado Springs (45,472);

Greeley (20,354); Boulder (19,999).

State forests: 1 (70,980 ac.).

Total state revenue (1956): \$277,995,340.

Total state expenditure (1956): \$273,149,498.

Colorado, the most elevated state in the nation, with 54 of its peaks over 14,000 feet in height and more than 1,000 going beyond the 10,000-foot mark, began as a miner of gold but has been predominantly agricultural in recent times. Livestock, wheat, hay, beans, sugar beets, corn, potatoes, barley and truck vegetables head the crop list. Like California and Arkansas, the state has a highly developed irrigation system to counteract its dry climate and promote farming.

Colorado is one of the nation's largest producers of uranium and vanadium; also mined are gold, silver, lead, zinc, copper, molybdenum, coal and several nonmetals. The state is also a leading oil producer.

Pueblo, the "Pittsburgh of the West," makes iron, steel, brick, tile and foundry products. Colorado Springs is perhaps the most popular tourist center in the Rocky Mountain sector. Mount Evans Highway is the highest auto road in North America. The world's highest suspension bridge stretches 1,053 feet over the Royal Gorge of the Arkansas River. Summit Lake, 12,740 feet high, near the top of Mt. Evans, is the highest lake in the U. S. reached by an auto road.

Of archeological interest are the cliff dwellings in the southwestern part of the state.

Coronado entered the state in 1540.

CONNECTICUT

Capital: Hartford.

Governor: Abraham A. Ribicoff, Dem. (to Jan. 1959).

Entered Union & (rank): Jan. 9, 1788- (5).

Present constitution adopted: 1818; revised effective 1955.

Motto: *Qui transtulit sustinet* (He who transplanted still sustains).

State flower: Mountain laurel (1907).

State tree: White oak (1947).

State bird: American robin (1943).

State song: None.

Nicknames: Constitution State; Nutmeg State; Land of Steady Habits.

Origin of name: From an Indian word meaning "beside the long tidal river."

1940 population & (rank): 1,709,242 (31).

1950 population & (rank): 2,007,280 (28).

1957 estimated population: 2,362,000.

Area & (rank): 5,009 sq. mi. (46).

Geographic center: In Hartford Co., at East Berlin.

Number of counties: 8.

Largest cities (1950 Census): Hartford (177,397); New Haven (164,443); Bridgeport (158,709); Waterbury (104,477); Stamford (74,293).

State forests: 26.

State parks: 72.

State general revenue (1956): \$259,366,000.

State general expenditure (1956): \$324,097,000.

Connecticut earned its sobriquet, the "Arsenal of the Nation," by its ability to turn out firearms and ammunition in early days, and from this developed an ability to turn out precision instruments of all classes.

Connecticut's cities produce a variety of products, some of which are: arms, sewing machines, airplanes, typewriters, motors, hardware, cutlery, tools, clocks, locks, pottery, machinery, brass products and hats. Hartford, which has the oldest U. S. newspaper, the *Courant*, established in 1764, is the insurance capital of the nation.

Connecticut devotes its farmland mainly to dairying, fruit growing and poultry raising. It stands high in tobacco growing and no crop in the nation receives as high a price per acre as her shade-grown tobacco.

The state is a popular resort area both for its beaches on Long Island Sound and for its inland lakes and forested hills. The southwest part of the state is a suburban area of New York City.

Connecticut was the first state to have a written constitution, the *Fundamental Orders*, adopted by three original towns of Colonial days in Jan. 1639.

DELAWARE

Capital: Dover.

Governor: J. Caleb Boggs, Rep. (to Jan. 1961).

Entered Union & (rank): Dec. 7, 1787 (1).

Present constitution adopted: 1897.

Motto: Liberty and independence.

State colors: Colonial blue and buff.

State flower: Peach blossom.

State tree: American holly.

State bird: Blue hen chicken.

State song: "Our Delaware."

Nicknames: Diamond State; Blue Hen State; First State.

Origin of name: In honor of Sir Thomas West, Lord De La Warr.

1940 population & (rank): 266,505 (46).

1950 population & (rank): 318,085 (46).

1956 estimated population: 402,000.

Area & (rank): 2,399.2 sq. mi. (47).

Geographic center: In Kent Co., 11 mi. S of Dover.

Number of counties: 3.

Largest cities (1950 Census): Wilmington (110,356); Newark (6,731); Dover (6,223);

New Castle (5,396); Elsmere (5,314).

State forests: 5 (4,709 ac.).

State parks: 3.

State general revenue (1956): \$50,071,701.

State general expenditure (1956): \$45,338,576.

Little Delaware, at the lowest mean elevation of any state, grows a great variety of small fruit and vegetables and is a U. S. pioneer in the industry of food canning. Peaches, strawberries, apples, corn, wheat, lima beans, asparagus, tomatoes and hay are the leading crops. Fishing in the bay is an important industry. Delaware's chicken farms are one of the great supply sources for the big markets of the East.

Manufactures in Delaware include chemicals, vulcanized fiber, glazed kid and morocco leathers, textiles, paper, dental supplies, metal products, machinery, machine tools and transportation equipment of every major type. In 1844, the *Bangor*, the first iron seagoing propeller-type vessel constructed in the U. S., was launched at Wilmington.

Delaware was the first state to ratify the U. S. Constitution, on Dec. 7, 1787. During the Civil War, although a slave state, Delaware refused to secede from the Union; the southern part of the state, however, supplied many supporters to the Confederacy.

Henry Hudson discovered Delaware Bay in his exploration of 1609. First settlers in the state were Dutchmen, who arrived in 1631, but who were shortly afterwards massacred by the Indians.

DISTRICT OF COLUMBIA

(City of Washington)

Land ceded to Congress: 1788 by Maryland; 1789 by Virginia (retroceded to Virginia Sept. 7, 1846).

Seat of government transferred to D. C.: Dec. 1, 1800.

Created municipal corporation: Feb. 21, 1871.

Present form of government established: June 11, 1878.

President of Board of Commissioners: Robert E. McLaughlin.

Motto: *Justitia omnibus* (Justice to all).

Official flower: American beauty rose.

Origin of name: In honor of Columbus.

1940 population & (rank as city): 663,091 (11).

1950 population & (rank as city): 802,178 (9).

1956 estimated population: 859,000.

Area: Land, 60.41 sq. mi.; inland water, 7.84.

Geographic center: Near corner of Fourth and L Sts., NW.

Altitude: Highest, 420 ft.; lowest, sea level.

Location: Between Virginia and Maryland, on Potomac River.

Churches: Protestant, 428; Roman Catholic, 40; Jewish, 21; others, 21.

City parks: 780 (6,945.5 ac.).

Telephones (Mar. 1, 1956): 553,507.

Radio sets: 250,400.

Television sets: 227,400.

Radio stations: AM, 7; FM, 8.

Television stations: 4.

Assessed valuation (June 30, 1957): \$3,216,205,-213.

City tax rate (1956): \$2.30 per \$100.

Bonded debt (1956): None.

Revenue (1956): \$193,096,532.

Expenditures (1956): \$184,777,845.

The District of Columbia—identical with the City of Washington—is the capital of the U. S. and the first carefully planned capital in the world.

D. C. history began in 1790 when Congress directed selection of a new capital site, 10 miles square, along the Potomac. When the site was determined, it included thirty and three-quarters square miles on the Virginia side of the river. In 1846, however, Congress returned that area to Virginia.

President Washington had commissioned Major Pierre L'Enfant, a French engineer who had fought in the Revolution, to plan the new capital and in 1800 the government moved in. In 1814, during the War of 1812, a British force fired the capital and it was from the white paint applied to cover fire damage that the President's home came to be called the White House.

Washington's skyline is dominated by the Capitol and the Washington Monument, towering 555 feet. The Capitol, while not in the city center, is the key to the street address system. The city is laid out in rectangular blocks, created by streets intersecting at right angles. In addition, diagonal arteries fan out from various centers. Pennsylvania Avenue—the radial lines are generally named for the states—is the most famous of them, with the White House at number 1600.

The Capitol is 751 feet long and 350 feet wide. It has 431 rooms. The two wings, constructed of marble, house the Senate and the House; and the central part of the building contains the Rotunda, the Statuary Hall and the old Supreme Court chamber. Visitors may go through the building from 9 a.m. until 4:30 p.m. Congress normally convenes at noon, and the floor of the Senate and House must be cleared by 11:45 a.m. The galleries in the Senate and House chambers are open to visitors during sessions.

Washington has many other famous buildings and monuments—the Library of Congress, Jefferson Memorial, Lincoln Memorial, Grant Memorial, Tomb of the Unknown Soldier (Arlington Cemetery), Treasury Building, the Pentagon, Petersen House (where Lincoln died) and scores of others.

Washington is administered by three commissioners appointed by the President. Two of them must be residents of the District of Columbia and the third must be a U. S. Army engineer appointed by the Chief of Engineers.

FLORIDA

Capital: Tallahassee.

Governor: LeRoy Collins, Dem. (to Jan. 1961).

Organized as territory: Mar. 30, 1822.

Entered Union & (rank): Mar. 3, 1845 (27).

Seceded from Union: Jan. 10, 1861.

Re-entered Union: June 25, 1868.

Present constitution adopted: 1885.

Motto: In God we trust.

State flower: Orange blossom (1909).

State bird: Mockingbird (1927).

State song: "Swanee River" (1935).

Nickname: Sunshine State.

Origin of name: From the Spanish, meaning "feast of flowers" (Easter).

1940 population & (rank): 1,897,414 (27).

1950 population & (rank): 2,771,305 (20).

1956 estimated population: 3,770,000.

Area & (rank): 58,666 sq. mi. (21).
 Geographic center: In Citrus Co., 12 mi. W of N of Brooksville.
 Number of counties: 67.
 Largest cities (1950 Census): Miami (249,276); Jacksonville (204,517); Tampa (124,681); St. Petersburg (96,738); Orlando (52,367).
 State forests: 4 (204,035 ac.).
 State parks: 23 (74,936 ac.).
 State general revenue (1953): \$278,479,314.
 State general expenditure (1953): \$220,374,511.

Agriculture is Florida's biggest steady pursuit, but hotel statistics point to its chief fame—resort and tourist business. Along its coastline, the longest of any state, dozens of communities more than double in population during the winter season when northerners flee snow and cold.

Oranges and grapefruit lead Florida's crop list, then come tomatoes, tobacco, beans, celery, potatoes and field corn. Truck gardening, commercial fishing and cattle are leading industries. Deep-sea fishing for sport is a leading tourist hobby. Industry is becoming increasingly important, with metal-working and chemicals now added to lumber, paper and citrus processing. Tampa is one of the largest cigar manufacturers and Jacksonville ships lumber and turpentine.

Florida's low elevation is dotted by some 30,000 small lakes and the Everglades National Park in the south. St. Augustine, founded in 1565, is the oldest town of European origin in the U. S. Key West, exclusive resort city, is the southernmost city in the U. S. and is connected to the mainland by a unique causeway.

In 1513, Ponce de León, seeking the mythical "Fountain of Youth," was the first white man to see the state.

GEORGIA

Capital: Atlanta.
 Governor: Samuel Marvin Griffin, Dem. (to Jan. 1959).
 Entered Union & (rank): Jan. 2, 1788 (4).
 Seceded from Union: Jan. 19, 1861.
 Re-entered Union: July 15, 1870.
 Present constitution adopted: 1945.
 Motto: Wisdom, justice and moderation.
 State flower: Cherokee rose (1916).
 State tree: Live oak (1937).
 State bird: Brown thrasher (1935).
 State song: "Georgia" (1922).
 Nicknames: Peach State; Empire State of the South.
 Origin of name: In honor of George II of England.
 1940 population & (rank): 3,123,723 (14).
 1950 population & (rank): 3,444,578 (13).
 1956 estimated population: 3,712,000.
 Area & (rank): 58,876 sq. mi. (20).
 Geographic center: In Twiggs Co., 18 mi. SE of Macon.
 Number of counties: 159.
 Largest cities (1950 Census): Atlanta (331,314); Savannah (119,638); Columbus (79,611); Augusta (71,508); Macon (70,252).
 State forests: 2 (2,000 ac.).
 State parks: 25 (32,222 ac.).
 State general revenue (1951): \$228,876,399.59.
 State general allocations (1951): \$217,110,506.78.

Georgia is typical of the changing South. The value of its factory products has passed the value of its farm products, and industrialization is ever increasing. Atlanta is achieving importance as an industrial center. Cotton and lumber products, fertilizer, processed food and a great variety of other items are among the factory output of Macon, Augusta, Savannah and Columbus.

Georgia ranks high in cotton, tobacco, peanuts and pecans. Georgia's peaches are nationally famous. From its vast stands of pine come more than half of all U. S. resin and turpentine. The state is one of the leaders in the value of its clay products. Cattle grazing is extensive. Georgia marble is widely used.

Warm Springs has the celebrated foundation operated to aid infantile paralysis victims. It was there that President Franklin D. Roosevelt died on April 12, 1945.

Hernando de Soto, a Spaniard, in 1540, looked over the red clay of Georgia, and General James Oglethorpe founded its first British colony Feb. 12, 1733, at Savannah.

IDAHO

Capital: Boise.
 Governor: Robert E. Smylie, Rep. (to Jan. 1959).
 Organized as territory: Mar. 3, 1863.
 Entered Union & (rank): July 3, 1890 (43).
 Present constitution adopted: 1890.
 Motto: *Esto perpetua* (It is perpetuated).
 State flower: Syringa (1931).
 State tree: White pine (1935).
 State bird: Mountain bluebird (1931).
 State song: "Here We Have Idaho."
 Nicknames: Gem State; Gem of the mountains.
 Origin of name: From a Shoshoni Indian word meaning "sunup."
 1940 population & (rank): 524,873 (42).
 1950 population & (rank): 588,637 (43).
 1957 estimated population: 640,000.
 Area & (rank): 83,557 sq. mi. (12).
 Geographic center: In Custer Co., 24 mi. S of W of Challis.
 Number of counties: 44, plus small part of Yellowstone Park.
 Largest cities (1950 Census): Boise (34,393); Pocatello (26,131); Idaho Falls (19,218); Twin Falls (17,600); Nampa (16,185); Lewiston (12,985).
 State forests: 925,000 ac.
 State parks: 4 (9,000 ac.).
 State revenue (1952): general fund, \$21,928,219.92; special funds, \$67,634,499.06.
 State expenditure (1952): general fund, \$19,449,181.12; special funds, \$66,491,880.24.
 Idaho's huge investment in irrigation has advanced its agriculture well ahead of its mining. Idaho potatoes are eaten everywhere. The state grows apples and other fruits and wheat, corn and barley. There is light diversified manufacturing and Pocatello sells its cheese to a world market.
 Idaho mines gold, silver, lead, zinc, copper and tungsten, and still has vast undeveloped mineral wealth. In its rugged central mountains is an area that is reachable only by pack horse. The forests of the state, cover-

ing at least one-third of the area, account for the fact that lumbering is extensive.

Tourist trade is important. Hunting and fishing are excellent. Sun Valley is a famed resort and attracts countless tourists to its swimming and skiing facilities.

Lewis and Clark visited Idaho in 1805 but real settlement began with the gold strike of 1860.

ILLINOIS

Capital: Springfield.

Governor: William G. Stratton, Rep. (to Jan. 1960).

Organized as territory: Feb. 3, 1809.

Entered Union & (rank): Dec. 3, 1818 (21).

Present constitution adopted: 1870.

Motto: State sovereignty, national union.

State flower: Violet (1908).

State tree: Oak (1908).

State bird: Cardinal (1929).

State song: "Illinois" (1925).

State slogan: Land of Lincoln.

Nickname: Prairie State.

Origin of name: From an Indian word and French suffix meaning "tribe of superior men."

1940 population & (rank): 7,897,241 (3).

1950 population & (rank): 8,712,176 (4).

1956 estimated population: 9,432,000.

Area & (rank): 56,400 sq. mi. (23).

Geographic center: In Logan Co., 28 mi. NE of Springfield.

Number of counties: 102.

Largest cities (1950 Census): Chicago (3,620,962); Peoria (111,856); Rockford (92,927);

East St. Louis (82,295); Springfield (81,628).

State forests: 3 (10,278 ac.).

State parks, memorials, conservation areas: 73 (28,000 ac.).

State revenue (1956): \$806,650,642.

State expenditure (1956): \$721,623,759.

Illinois anchors the Midwest like a rich giant, versatile in every big wealth-making industry. It stands high in manufacturing, coal mining, farm cash income, oil production. The sprawling Chicago district (including a slice of Indiana) is a great iron and steel producer, meat packer, grain exchange and railroad center. Chicago is also a busy long-flight airport city and Great Lakes port area. The Illinois sand and gravel business is exceeded only by that of California.

In agriculture, Illinois is first in soy beans and high in corn, oats, wheat, barley, rye, potatoes and truck vegetables. Hog raising and dairying are important industries of the state.

Illinois manufactures almost everything. Railroad cars, clothing, furniture, tractors, liquor, watches and farm implements are some of the items made in its several cities. An important U. S. arsenal is located on a Mississippi island off Rock Island.

Central Illinois is noted for shrines and memorials associated with the life and works of Abraham Lincoln, greatest son of Illinois. In Springfield are the Lincoln Home and Lincoln Tomb. At New Salem State Park, 20 miles northwest of Springfield, the reconstructed village of New Salem stands as a notable Lincoln memorial.

Marquette and Joliet, in 1673, were the first known explorers of this state.

INDIANA

Capital: Indianapolis.

Governor: Harold W. Handley, Rep. (to Jan. 1961).

Organized as territory: May 7, 1800.

Entered Union & (rank): Dec. 11, 1816 (19).

Present constitution adopted: 1851.

Motto: The Crossroads of America.

State flower: Peony (1957).

State tree: Tulip tree (1931).

State bird: Cardinal (1933).

State song: "On the Banks of the Wabash, Far Away" (1913).

Nickname: Hoosier State.

Origin of name: Meaning "land of Indians."

1940 population & (rank): 3,427,796 (12).

1950 population & (rank): 3,934,224 (12).

1956 estimated population: 4,422,800.

Area & (rank): 36,291 sq. mi. (37).

Geographic center: In Boone Co., 14 mi. W of N of Indianapolis.

Number of counties: 92.

Largest cities (1950 Census): Indianapolis (427,173); Gary (133,911); Ft. Wayne (133,607);

Evansville (128,636); South Bend (115,911).

State forests: 14 (113,880.46 ac.).

State parks: 18 (47,386.43 ac.).

State general revenue (1955): \$389,419,000.*

State general expenditure (1955): \$441,118,000.†

* Includes borrowing. † Includes redemptions.

Indiana's fifty-one-mile Michigan waterfront is one of the great industrial centers of the world, turning out iron and steel and oil products to make this state a leader in manufacturing. Its cities have some of the world's largest industrial plants and their great output is further swelled by the inland factories. The list of products is endless—automobiles, farm implements, aviation and railroad equipment, sewing machines are made from iron ore mined in the Great Lakes region.

In farming the state stands high in soy beans, corn, tobacco, onions, wheat, oats, rye and tomatoes.

Indianapolis is the second largest U. S. city not on a navigable body of water. Wyandotte Cave, the second largest in the U. S., is located in Crawford County of Southern Indiana. West Baden and French Lick are well known for their mineral springs. Indiana was one of the early states to adopt the secret ballot based on the Australian system.

IOWA

Capital: Des Moines.

Governor: Herschel C. Loveless, Dem. (to Jan. 1959).

Organized as territory: June 12, 1838

Entered Union & (rank): Dec. 28, 1846 (29).

Present constitution adopted: 1857.

Motto: Our liberties we prize and our rights we will maintain.

State flower: Wild rose (1897).

State bird: Eastern goldfinch (1933).

State colors: Red, white and blue (in state flag).

State song: "Song of Iowa."

Nickname: Hawkeye State.

Origin of name: Probably from an Indian word meaning "I-o-w-a, this is the place."

1940 population & (rank): 2,538,268 (20).

1950 population & (rank): 2,621,073 (22).

1956 estimated population: 2,692,000.

Area & (rank): 56,280 sq. mi. (24).

Geographic center: In Marshall County, 2½ mi. S of State Center.

Number of counties: 99.

Largest cities (1950 Census): Des Moines (177,965); Sioux City (83,991); Davenport (74,549); Cedar Rapids (72,296); Waterloo (65,198).

State forests: 7 (13,469 ac.).

State parks: 89 (28,437 ac.).

State general revenue (1955-56): \$140,949,965.

State general expenditure (1955-56): \$136,917,930.

Iowa stands in a class by itself as an agricultural state, supplying 10% of the nation's food supply. It ranks first in livestock income, value of beef marketed, production averages of oats and popcorn, and production of hogs, chickens, eggs, corn and timothy seed. Nearly 95% of the state's total acreage is in farms, and the fertility of its soil is unsurpassed. Of all the Grade A land in the country, 25% is in Iowa.

However, the value of Iowa's manufactured products exceeds that of her agricultural products. The top industrial activity is meat packing. Des Moines fittingly leads all cities in the publication of farm journals and is also a large insurance center.

Iowa has the lowest functional illiteracy rate in the nation.

West Branch is the birthplace of Herbert Hoover, who was the first President of the U. S. to be born west of the Mississippi.

Marquette and Joliet first explored the state in 1673.

KANSAS

Capital: Topeka.

Governor: George Docking, Dem. (to Jan. 1959).

Organized as territory: May 30, 1854.

Entered Union & (rank): Jan. 29, 1861 (34).

Present constitution adopted: 1861.

Motto: *Ad astra per aspera* (To the stars through difficulties).

State flower: Sunflower (1903).

State tree: Cottonwood (1937).

State bird: Western meadow lark (1937).

State animal: Buffalo (1955).

State song: "Home on the Range" (1947).

State march: "The Kansas March" (1935).

Nicknames: Sunflower State; Jayhawk State.

Origin of name: From a Sioux word meaning "people of the south wind."

1940 population & (rank): 1,801,028 (29).

1950 population & (rank): 1,905,299 (31).

1956 estimated population: 2,077,711.

Area & (rank): 82,276 sq. mi. (13).

Geographic center: In Barton Co., 15 mi. NE of Great Bend.

Number of counties: 105.

Largest cities (1950 Census): Wichita (168,279);

Kansas City (129,553); Topeka (78,791);

Hutchinson (33,575); Salina (26,176).

State forests: 1 (4,000 ac.).

State parks: 22 (14,394 ac.).

State operating revenue (1955-56): \$253,293,446.
State operating expenditure (1955-56): \$245,641,297.

Kansas finds its strength in wheat growing, flour milling and a variety of manufacturing enterprises. Slaughtering and meat packing are also extensively pursued. In the western part of the state, where Dodge City recalls the old days of cattle rustling, rich prairie land sprawls over a large area and gives an abundance of winter wheat and fine grazing.

Corn, sorghums, oats, barley, soy beans and potatoes are other crops. Besides oil, Kansas mines zinc, coal, salt and lead.

The state is the geographical center of the U. S., and the geodetic center of the North American continent.

Wichita, a growing industrial center, is a leader in the production of military and civilian aircraft. Kansas City is a transportation, milling, and meat-packing center.

After being dry since the Murray Liquor Law of 1881, Kansas repealed prohibition in March 1949.

Points of unusual interest in Kansas include: President Eisenhower's boyhood home and the new Eisenhower Memorial Museum at Abilene; the geographic center of the U. S. at Lebanon; John Brown's well-preserved cabin at Osawatimie; and two historic military reservations—Ft. Leavenworth and Ft. Riley.

KENTUCKY

Capital: Frankfort.

Governor: A. B. Chandler, Dem. (to Dec. 1959).

Entered Union & (rank): June 1, 1792 (15).

Present constitution adopted: 1891.

Motto: United we stand, divided we fall.

State flower: Goldenrod.

State bird: Kentucky cardinal.

State song: "My Old Kentucky Home."

Nickname: Blue Grass State.

Origin of name: From an Iroquoian Indian word "Ken-tah-ten" meaning "land of tomorrow."

1940 population & (rank): 2,845,627 (16).

1950 population & (rank): 2,944,806 (19).

1956 estimated population: 3,017,000.

Area & (rank): 40,395 sq. mi. (36).

Geographic center: In Marion Co., 3 mi. W of N of Lebanon.

Number of counties: 120.

Largest cities (1950 Census): Louisville (369,129); Covington (64,452); Lexington (55,534); Owensboro (33,651); Paducah (32,828).

State forests: 3 (30,022 ac.).

State parks: 26 (16,888 ac.).

Total state revenue (1955-56): \$242,483,022.

Total state expenditure (1955-56): \$243,237,167.

Kentucky prides itself on producing some of the nation's best tobacco, horses and whisky. It stands high in the production of native asphalt, hemp, coal, corn, oil.

Among the manufactured items produced by its cities are furniture, aluminum ware, brooms, shoes, lumber products, machinery, textiles and iron and steel products. Besides coal and oil, important minerals are natural gas and quarry products.

Louisville, the largest city, famed for the Kentucky Derby at Churchill Downs, has a large municipal university, distills whiskey and is a great cigarette maker. The Blue Grass country is the home of some of the world's finest race horses. Lexington, standing in the center of this country, is a leading tobaccoist. Mammoth Cave, with its many miles of underground passages, is one tourist attraction. Another is Kentucky Lake, 184 miles wide, one of the largest man-made bodies of water in the world.

Kentucky was credited with a star in the Confederate flag because a secessionist group in the southwest part of the state set up a short-lived government and joined the Confederacy. The legitimate government, however, remained in the Union throughout the Civil War.

Marquette and Joliet in 1673 saw Kentucky when it was the "Dark and Bloody Ground," fiercely contested by Indian tribes. Daniel Boone explored the country in 1767.

LOUISIANA

Capital: Baton Rouge.

Governor: Earl K. Long, Dem. (to May 1960).

Organized as territory: Mar. 26, 1804.

Entered Union & (rank): Apr. 30, 1812 (18).

Seceded from Union: Jan. 26, 1861.

Re-entered Union: May 26, 1865.

Present constitution adopted: 1921.

Motto: Union, justice and confidence.

State flower: Magnolia (1900).

State bird: Pelican (unofficial).

State song: "Song of Louisiana."

Nicknames: Pelican State; Creole State; Sugar State.

Origin of name: In honor of Louis XIV of France.

1940 population & (rank): 2,363,880 (21).

1950 population & (rank): 2,683,516 (21).

1956 estimated population: 3,004,000.

Area & (rank): 48,523 sq. mi. (30).

Geographic center: In Avoyelles Parish, 3 mi. SE of Marksville.

Number of parishes (counties): 64.

Largest cities (1950 Census): New Orleans

(570,445); Shreveport (127,206); Baton

Rouge (125,629); Lake Charles (41,272);

Monroe (38,572).

State forests: 1 (8,000 ac.).

State parks: 15 (13,323 ac.).

State general revenue (1955-56): \$535,399,433.

State general expenditure (1955-56): \$496,325,624.

Louisiana, which still calls its counties parishes after the Spanish religious divisions, is one of the leading states in fur trapping, with a rich annual bag of mink, muskrat, opossum and raccoon pelts. Other important agricultural products are sugar cane, sweet potatoes, rice and cotton. The state is rapidly becoming industrialized, and is an important producer of petroleum and petrochemicals, pulp and paper, natural gas, sulfur, chemicals and salt.

New Orleans, home of the Mardi Gras, avoids flooding only by an expensive levee and spillway system. Her industry is making increased use of raw materials from South and Central America. The Vieux Carré, in this Old World city, called by many the

"Little Paris" of the New World, has some of the celebrated restaurants of the nation.

Louisiana has a great variety and abundance of game birds. Its state-owned wildlife sanctuaries are among the world's largest.

Hernando de Soto, in the year 1540, is usually considered the first white man to see the state, but claims are made for Narvaez, who is reputed to have seen the state as early as 1528.

MAINE

Capital: Augusta.

Governor: Edmund S. Muskie, Dem. (to Jan. 1959).

Entered Union & (rank): Mar. 15, 1820 (23).

Present constitution adopted: 1820.

Motto: *Dirigo* (I guide).

State flower: White pine cone and tassel (1895).

State tree: Pine tree.

State bird: Chickadee (1927).

State song: "State of Maine Song" (1937).

Nickname: Pine Tree State.

Origin of name: From the French province of Mayne.

1940 population & (rank): 847,226 (35).

1950 population & (rank): 913,774 (35).

1956 estimated population: 910,000.

Area & (rank): 33,215 sq. mi. (38).

Geographic center: In Piscataquis Co., 18 mi. N of Dover-Foxcroft.

Number of counties: 16.

Largest cities (1950 Census): Portland (77,634);

Lewiston (40,974); Bangor (31,558); Au-

burn (23,134); South Portland (21,866).

State forests: 1 (21,000 ac.).

State parks: 6 (133,042 ac.).

State general revenue (1956): \$95,922,020.

State general expenditure (1956): \$91,685,260.

Maine, the largest potato grower in the nation, is supposed to be the political barometer of the nation because it holds its general election a little more than a month before the other states, a situation that has brought forth the popular expression, "As Maine goes, so goes the nation." But considering that the state invariably votes Republican, it is evident that the nation sometimes fails to follow it.

Maine has the largest forest area in the East, some 16,783,000 acres in timberland and, as a result, pulp, paper making and lumbering are leading industries. In addition to the potato crops, hay, oats, buckwheat and apples are grown. Manufacturing includes textiles, shoes and fruit canning. Much poultry is raised.

Acadia National Park, on Mount Desert Island, approximately 50 miles southeast of Bangor, offers one of the finest examples of mountain and ocean views to be found on the Atlantic.

With 2,500 lakes, hundreds of streams and a bracing summer climate, Maine is famous as a resort state. Fishing is excellent and deer, bear and other game are plentiful. Its city of Eastport is the most easterly city in the U. S., and York was the first chartered city (in 1642) in the nation.

MARYLAND

Capital: Annapolis.
Governor: Theodore R. McKeldin, Rep. (to Jan. 1959).
Entered Union & (rank): Apr. 28, 1788 (7).
Present constitution adopted: 1867.
Motto: *Fatti maschii, parole femine* (Manly deeds, womanly words).
State flower: Black-eyed susan (1918).
State tree: White oak (1941).
State bird: Baltimore oriole (1882).
State colors: Black and gold (1904).
State song: "Maryland! My Maryland!" (1939).
Nicknames: Free State; Old Line State.
Origin of name: In honor of Henrietta Maria (Queen of Charles I of England).
1940 population & (rank): 1,821,244 (28).
1950 population & (rank): 2,343,001 (24).
1956 estimated population: 2,812,000.
Area & (rank): 10,577 sq. mi. (41).
Geographic center: In Anne Arundel Co., 3 mi. E of Collington.
Number of counties: 23, plus 1 independent city.
Largest cities (1950 Census): Baltimore (949,708); Cumberland (37,679); Hagerstown (36,260); Frederick (18,142); Salisbury (15,141), Annapolis (10,047).
State forests: 10 (119,795 ac.).
State parks: 13 (11,181.5 ac.).
State general revenue (1956): \$489,493,741.
State general expenditure (1956): \$474,597,974.

Maryland is cut almost in two by Chesapeake Bay, and the many estuaries and rivers create one of the longest water fronts of any state. The Bay produces more seafood—oysters, crabs, clams, fin fish—than any comparable body of water, and is a major crabbing center. Important agricultural products are vegetables, tobacco, corn, wheat, soy beans, and dairy products. Maryland is a leader in vegetable canning and broiler raising. Sand and gravel, stone, coal, and clay are the chief mineral products.

Manufactures, which center in Baltimore, include airplanes, steel, clothing, and chemicals. The port of Baltimore ranks second in the country in foreign trade tonnage. Baltimore is the home of the Johns Hopkins University and Hospital. In Annapolis, State capital and home of the U. S. Naval Academy, is one of the earliest state houses (1772-1779) still in regular use by a State government.

The Charter of Maryland was granted in 1632 to Lord Baltimore, who died before it had passed the Great Seal; it was issued to his oldest son, Cecil. The first settlers landed at St. Mary's in 1634.

MASSACHUSETTS

Capital: Boston.
Governor: Foster Furcolo, Dem. (to Jan. 1959).
Entered Union & (rank): Feb. 6, 1788 (6).
Present constitution adopted: 1780.
Motto: *Ense petit placidam sub libertate quietem* (By the sword we seek peace, but peace only under liberty).
State flower: Mayflower (1918).
State tree: American elm (1941).
State bird: Chickadee (1941).
State colors: Blue and gold (in flag and shield).

State song: None.

Nicknames: Bay State; Old Colony State.

Origin of name: From two Indian words meaning "great mountain place."

1940 population & (rank): 4,316,721 (8).

1950 population & (rank): 4,690,514 (9).

1955 population: 4,837,645.

Area & (rank): 8,257 sq. mi. (44).

Geographic center: In Worcester Co., in N part of city of Worcester.

Number of counties: 14.

Largest cities (1955 State Census): Boston (724,702); Worcester (202,612); Springfield (166,052); New Bedford (105,488); Fall River (105,195).

State forests: 70 (170,000 ac.).

State parks: 7 (4,792 ac.).

State general revenue (1954): \$447,076,000.

State general expenditure (1954): \$523,495,000.

Massachusetts is the leading shoe producer in the U. S., and has been one of the leaders in the making of textiles since the beginning of American history. The top-ranking industries are electrical and other machinery, leather and leather products, apparel and fabricated metals. Logan International Airport at East Boston, the nearest point in the U. S. to Europe, ranks among the world's greatest aerodromes. It has the longest commercial runway in the U. S. (10,022 ft.) and the longest air passenger terminal building in the world (3,053 ft.).

The most valuable agricultural products, ranked in order of importance, are hay, tobacco, cranberries, apples, potatoes, corn and tomatoes. There is also a large livestock industry, especially poultry.

The growth of factories brought to this state an influx of foreigners and today Boston has one of the largest Irish populations in the nation. Boston became prominent as the "Cradle of Liberty" in early days and it was here that Paul Revere rode from Christ Church on Copp's Hill and the Battle of Bunker Hill was fought.

Small glacial lakes are scattered throughout the state.

The Pilgrims landed at Plymouth Rock in 1620 as the first large group to settle here but legend has it that Eric the Red and his Norsemen saw the state in the year 1000.

MICHIGAN

Capital: Lansing.

Governor: G. Mennen Williams, Dem. (to Jan. 1959).

Organized as territory: Jan. 11, 1805.

Entered Union & (rank): Jan. 26, 1837 (26).

Present constitution adopted: 1908.

Motto: *Si quaeris peninsulam amoenam circumspice* (If you seek a pleasant peninsula, look around you).

State flower: Apple blossom (1897).

State bird: Robin (unofficial).

State animal: Wolverine (unofficial).

State song: "Michigan, My Michigan" (unofficial).

Nickname: Wolverine State.

Origin of name: From two Indian words meaning "great lake."

1940 population & (rank): 5,256,106 (7).

1950 population & (rank): 6,371,766 (7).

1956 estimated population: 7,516,000.

Area & (rank): 58,216 sq. mi. (22).

Geographic center: In Wexford Co., 5 mi. W of N of Cadillac.

Number of counties: 83.

Largest cities (1950 Census): Detroit (1,849,568); Grand Rapids (176,515); Flint (163,143); Dearborn (94,994); Saginaw (92,918).

State forests: 23 (3,744,082 ac.).

State parks: 60 (178,991 ac.).

State general revenue (1954-55): \$787,522,861.

State general expenditure (1954-55): \$757,845,501.

On a map of Michigan, draw an eighty-five-mile circle around Detroit and it will contain the home plants of the companies that make nine out of ten American automobiles. This industry, which sprang up about fifty years ago from the carriage-building business, is not the only activity of this state. Airplane parts, furniture (Grand Rapids is the furniture center of the U. S.), diesel engines, hoists, pumps, boilers are among its leading items of production. Most of the nation's refrigerators are made in Michigan. On its farms are grown dry beans, grapes, peaches, potatoes, sugar beets and other food crops.

Michigan is the only state that is split completely in two parts. The northern peninsula is mining and timber country. The southern part is agricultural and manufacturing country. Connecting Lakes Superior and Huron is the busiest canal in the world—the Sault Ste. Marie. Its 11,037 inland lakes and 2,242 miles of Great Lakes shoreline make Michigan a good vacation land.

Michigan has the greatest inland fisheries in the world and markets at least 20 species from carp, trout, perch, pike to lake herring. The artificial ski jump on Iron Mountain is probably the highest in the world.

Jacques Cartier, in 1535, was the first white man to see the state.

MINNESOTA

Capital: St. Paul.

Governor: Orville L. Freeman, Dem. (to Jan. 1959).

Organized as territory: Mar. 3, 1849.

Entered Union & (rank): May 11, 1858 (32).

Present constitution adopted: 1858.

Motto: *L'Etoile du Nord* (The North Star).

State flower: Moccasin flower (1902).

State tree: Norway pine.

State bird: None.

State song: "Hail Minnesota."

Nicknames: North Star State; Gopher State;

Land of 10,000 Lakes.

Origin of name: From a Dakota Indian word meaning "sky-tinted water."

1940 population & (rank): 2,792,300 (18).

1950 population & (rank): 2,982,483 (18).

1956 estimated population: 3,248,196.

Area & (rank): 84,068 sq. mi. (11).

Geographic center: In Crow Wing Co., 10 mi. SW of Brainerd.

Number of counties: 87.

Largest cities (1950 Census): Minneapolis (521,718); St. Paul (311,349); Duluth (104,511); Rochester (29,885); St. Cloud (28,410).

State forests: 32 (2,037,065 ac.).

State parks: 61 (84,350 ac.).

State general revenue (1956): \$589,547,807.

State general expenditure (1956): \$579,466,244.

A few square miles of Northern Minnesota, in the Mesabi, Cuyuna and Vermillion Ranges, produce most of the nation's iron ore, and provide the activity for the port of Duluth. Farm and factory are equally important in Minnesota. Its farms produce oats, butter, eggs, milk, corn, wheat, potatoes, etc. Its factory production follows the pattern of the Midwest. Machinery, furniture, foundry products, etc. are manufactured.

Minneapolis is the trade center of the Northwest. Its twin city St. Paul is the nation's biggest publisher of calendars and law books.

With over 11,000 lakes, the state is famous for its fishing, hunting and trapping.

Minnesota has many famous resort regions. Travel business for 1954 was estimated to exceed \$290 million.

In 1655, Radisson and Groselliers, French traders from Canada, were the first white men to see the state.

MISSISSIPPI

Capital: Jackson.

Governor: J. P. Coleman, Dem. (to Jan. 1960).

Organized as territory: Apr. 7, 1798.

Entered Union & (rank): Dec. 10, 1817 (20).

Seceded from Union: Jan. 9, 1861.

Re-entered Union: Feb. 23, 1870.

Present constitution adopted: 1890.

Motto: *Virtute et armis* (By valor and arms).

State flower: Flower or bloom of the magnolia or evergreen magnolia (1952).

State tree: Magnolia (1938).

State bird: Mockingbird (1944).

State song: "Way Down South in Mississippi" (1948).

Nickname: Magnolia State.

Origin of name: From an Indian word meaning "Father of Waters."

1940 population & (rank): 2,183,796 (23).

1950 population & (rank): 2,178,914 (26).

1956 estimated population: 2,124,000.

Area & (rank): 47,716 sq. mi. (31).

Geographic center: In Leake Co., 9 mi. N of W of Carthage.

Number of counties: 82.

Largest cities (1950 Census): Jackson (98,271);

Meridian (41,893); Biloxi (37,425); Greenville (29,936); Hattiesburg (29,474).

State forests: 1 (1,760 ac.).

State parks: 10 (10,972 ac.).

State general revenue (1950): \$132,573,383.20.

State general expenditure (1950): \$134,463,877.57.

Mississippi, the stronghold of the Old South, has until the past decade been one of the least industrialized states, with more than half its population making a living from the soil. A recent program of industrialization, however, has attracted numerous manufacturing concerns. Cotton, nevertheless, is still king. The world's largest

cotton plantation of 35,000 acres is located at Scott. Other crops are corn, peanuts, oats, pecans, soybeans, rice, tung nuts, sugar cane and hay.

Mississippi's Central Hills have produced a serious soil-erosion problem due to the over-emphasis placed on cotton growing through the years. Introduction of livestock and dairying and the pasture improvement programs attendant to it have helped in recent years to remedy this situation.

Mississippi was first to ratify the 18th Amendment and is still one of the two states (the other, Oklahoma) that bans the sale of hard liquor. In 1950, it had the third largest Negro population in the U. S.

The state abounds in historical landmarks and is the home of the Vicksburg National Military Park commemorating Grant's victory on this site.

MISSOURI

Capital: Jefferson City.

Governor: James T. Blair, Jr., Dem. (to Jan. 1961).

Organized as territory: June 4, 1812.

Entered Union & (rank): Aug. 10, 1821 (24).

Present constitution adopted: 1945.

Motto: *Salus populi suprema lex esto* (The welfare of the people shall be the supreme law).

State flower: Hawthorn (1923).

State bird: Bluebird (1927).

State colors: Red, white and blue (1913).

State song: "Missouri Waltz" (1949).

State tree: Dogwood (1955).

Nickname: Show-me State.

Origin of name: From an Indian word probably meaning "muddy water."

1940 population & (rank): 3,784,664 (10).

1950 population & (rank): 3,954,653 (11).

1956 estimated population: 4,255,000.

Area & (rank): 69,226 sq. mi. (18).

Geographic center: In Miller Co., 20 mi. SW of Jefferson City.

Number of counties: 114, plus 1 independent city.

Largest cities (1950 Census): St. Louis (856,796); Kansas City (456,622); St. Joseph (78,588); Springfield (66,731); University City (39,892).

State forests: 8 (163,000 ac.).

State parks: 30 (70,000 ac.).

State general revenue (1955-56): \$388,381,232.

State general expenditure (1955-56): \$385,686,411.

Missouri, touching both South and North, ranks highest in mining lead, making corn-cob pipes and breeding mules. Sometimes called the "saddle horse capital of the world" because of its excellent breeds, this state also grows corn, wheat, oats, barley, potatoes, tobacco and cotton on its fertile table land climbing to the Ozark Mountains. This country of rugged, timbered hills and deep valleys, has more than 10,000 swift-flowing streams. It produces automobiles, shoes, drugs, chemicals, beer and street cars.

Eads Bridge, spanning the Mississippi River at St. Louis, probably handles more freight cars than any other bridge in the world. Bagnell Dam, across the Osage River in the Ozarks, completed in 1931, created

one of the largest artificial lakes in the world, running for 129 miles and having a shoreline that extends for approximately 1,300 miles.

The homes of two of Missouri's most publicized sons—Mark Twain and Jesse James—are tourist attractions.

Missouri, like Kentucky, had a star in the Confederate flag because a minority of the state legislature adopted an ordinance of secession. The Governor and pro-secession legislature, however, were ousted and the state remained in the Union.

MONTANA

Capital: Helena.

Governor: J. Hugo Aronson, Rep. (to Jan. 1961).

Organized as territory: May 26, 1864.

Entered Union & (rank): Nov. 8, 1889 (41).

Present constitution adopted: 1889.

Motto: *Oro y plata* (Gold and silver).

State flower: Bitterroot (1895).

State tree: Ponderosa pine (1949).

State bird: Western meadow lark (1931).

State song: "Montana" (1945).

Nickname: Treasure State.

Origin of name: Chosen from Mexican dictionary by J. M. Ashley. It is a Mexicanized Spanish word.

1940 population & (rank): 559,456 (39).

1950 population & (rank): 591,024 (42).

1956 estimated population: 675,000.

Area & (rank): 147,138 (3).

Geographic center: In Fergus Co., 12 mi. W of Lewistown.

Number of counties: 56, plus small part of Yellowstone National Park.

Largest cities (1950 Census): Great Falls (39,214); Butte (33,251); Billings (31,834); Missoula (22,485); Helena (17,581).

State forests: 7 (686,000 ac.).

State parks: 14 (2,802 ac.).

State general revenue (1955-56): \$106,322,876.

State general expenditure (1955-56): \$100,040,570.

Montana's story is the old Western story—few settlers until a gold strike in 1858 brought an influx. Mining is its present occupation, and lead, zinc, silver, coal and oil are taken from its earth.

Butte, sitting on the "richest hill in the world," is the center of the area that once supplied half of the U. S. copper (its most important mineral). Livestock, wool, lumber and dude ranching round out its interests. Agriculture in the state is dependent on irrigation.

The state as a whole still possesses the frank character of the old days, reflected in the legend that the only reason Helena was selected as the name to replace Last Chance Gulch was because of the suggestion of profanity in the front part of that name. Glacier National Park is a popular tourist area with its rugged scenery, hunting areas and dude ranches. While little development has as yet been made, Montana offers fine potentialities for winter sports. Snow conditions are good throughout the winter in the National Forest Service areas.

NEBRASKA

Capital: Lincoln.

Governor: Victor E. Anderson, Rep. (to Jan. 1959).

Organized as territory: May 30, 1854.

Entered Union & (rank): Mar. 1, 1867 (37).

Present constitution adopted: 1875.

Motto: Equality before the law.

State flower: Goldenrod (1895).

State tree: American elm (1937).

State bird: Western meadow lark (1929).

State song: "My Nebraska" (unofficial).

Nickname: Cornhusker State.

Origin of name: From an Oto Indian word meaning "flat water."

1940 population & (rank): 1,315,834 (32).

1950 population & (rank): 1,325,510 (33).

1956 estimated population: 1,414,000.

Area & (rank): 77,407 sq. mi. (14).

Geographic center: In Custer Co., 10 mi. NW of Broken Bow.

Number of counties: 93.

Largest cities (1950 Census): Omaha (251,117);

Lincoln (98,884); Grand Island (22,682);

Hastings (20,211); North Platte (15,433).

State forests: 2.

State parks: 7 (1,036 ac.).

State general revenue (1956): \$112,093,658.

State general expenditure (1956): \$112,093,658.

Nebraska lives by its expansive sea of grain, reflected in its bumper crops of rye, corn and wheat. There are more varieties of grass growing in this state, valuable for forage, than in any other state in the nation. Its sizable cattle and hog industry help to make Omaha a great stockyard and meat-packing center. Flour, freight cars, farm machinery, precision instruments, brick and tile are products of Nebraska.

Oil was discovered in Nebraska in 1939, and natural gas in 1949. The state was 14th in oil production in the U. S. for 1956.

In 1937, Nebraska became the only state in the Union to have a unicameral (one-house) legislature. Members are elected to it without party designation.

NEVADA

Capital: Carson City.

Governor: Charles H. Russell, Rep. (to Jan. 1959).

Organized as territory: Mar. 2, 1861.

Entered Union & (rank): Oct. 31, 1864 (36).

Present constitution adopted: 1864.

Motto: All for our country.

State flower: Sagebrush (1917).

State tree: Pinyon pine (official).

State bird: Mountain bluebird (unofficial).

State colors: Blue and silver (unofficial).

State song: "Home Means Nevada" (1933).

Nicknames: Sagebrush State; Silver State; Battle Born State.

Origin of name: Spanish: meaning "snow-clad."

1940 population & (rank): 110,247 (48).

1950 population & (rank): 160,083 (48).

1956 estimated population: 247,000.

Area & rank: 110,690 (6).

Geographic center: In Lander Co., 23 mi. SE of Austin.

Number of counties: 17.

Largest cities (1950 Census): Reno (32,497); Las Vegas (24,624); Sparks (8,203); Elko (5,393); North Las Vegas (3,875).

State forests: None.

State parks: 9 (11,337 ac.).

State general revenue (1956): \$65,539,225

State general expenditure (1956): \$58,139,456

Nevada, the smallest state in population, had in 1950 about one and one-half persons per square mile. It was made famous by the discovery of the fabulous Comstock Lode in 1859, and has since lived mainly on its mines which give up large quantities of gold, silver, copper, lead, zinc, quicksilver and tungsten. Oil was discovered for the first time in Feb. 1954. There are also uranium deposits.

In 1931, the state created a new industry by writing an easy divorce law and Reno has since become the "divorce capital of the nation." Gambling was legalized and the gaming tables now pay a tax to add to the state's income.

Near Las Vegas, on the Colorado River, stands the Hoover Dam which has twice changed its name (Hoover to Boulder to Hoover).

The state's agricultural crop consists mainly of hay, wheat, barley and potatoes.

Nevada was the first state to use gas for capital punishment.

NEW HAMPSHIRE

Capital: Concord.

Governor: Lane Dwinell, Rep. (to Jan. 1959).

Entered Union & (rank): June 21, 1788 (9).

Present constitution adopted: 1784.

Motto: Live free or die.

State flower: Purple lilac (1919).

State tree: White birch (1947).

State bird: None.

State song: "Old New Hampshire" (1949).

Nickname: Granite State.

Origin of name: From the English county of Hampshire.

1940 population & (rank): 491,524 (45).

1950 population & (rank): 533,242 (44).

1956 estimated population: 560,000.

Area & (rank): 9,304 sq. mi. (43).

Geographic center: In Belknap Co., 3 mi. E of Ashland.

Number of counties: 10.

Largest cities (1950 Census): Manchester (82,-

732); Nashua (34,669); Concord (27,988);

Portsmouth (18,830); Berlin (16,615).

State forests: 143 (55,769 ac.).

State parks: 33 (30,976 ac.).

State general revenue (1955): \$46,964,078.

State general expenditure (1955): \$58,774,503.

New Hampshire is the only state that ever played host at the formal conclusion of a foreign war when, in 1905, Portsmouth was the scene of the treaty ending the Russo-Japanese War. The sandy and stony loam of this state needs liberal fertilization for the growing of its principal crops—fruit, truck vegetables, corn, oats, hay and potatoes. Its chief manufacturing is the production of textiles, leather goods, pulp and paper products.

New Hampshire was the first state to declare its independence from Great Britain

and to adopt a constitution. Mt. Washington has recorded some of the world's strongest wind velocities, the last recording of record proportions being registered at 231 miles per hour. The state also has the largest legislative body; it varies from 375 to 400.

With 1,300 lakes and good climate for both winter sports and summer vacations, the state is highly popular as a resort area.

NEW JERSEY

Capital: Trenton.

Governor: Robert B. Meyner, Dem. (to Jan. 1958).

Entered Union & (rank): Dec. 18, 1787 (3).

Present constitution adopted: 1947.

Motto: Liberty and prosperity.

State flower: Purple violet (1913).

State bird: Eastern goldfinch (1935).

State tree: Red oak (1950).

State colors: Blue and gold.

State song: None.

Nickname: Garden State.

Origin of name: From the Channel Isle of Jersey.

1940 population & (rank): 4,160,165 (9).

1950 population & (rank): 4,835,329 (8).

1956 estimated population: 5,403,000.

Area & (rank): 8,204 sq. mi. (45).

Geographic center: In Mercer Co., 5 mi. SE of the State capitol.

Number of counties: 21.

Largest cities (1950 Census): Newark (438,776);

Jersey City (299,017); Paterson (139,336);

Trenton (128,009); Camden (124,555).

State forests: 11 (151,922 ac.).

State parks: 23 (26,825 ac.).

State general revenue (1955-56): \$448,412,087.

State general expenditure (1955-56): \$484,765,643.

New Jersey, situated in an area of wide industrial diversification between the major markets of Philadelphia and New York, is known as the crossroads of the East. Products from over 15,000 factories and shops can be delivered overnight to about 52 million people, representing 12 states and the District of Columbia. The greatest single industry is chemicals, and New Jersey is one of the foremost research centers of the world. Oil refining and shipbuilding are represented at Linden and Camden by some of the largest installations of their kind.

Of the total land area, 43% is forested and nearly 35% is devoted to agriculture. The state rates high in practically all garden vegetables. Among its fruit crops are the famous cultivated blueberries, which originated in New Jersey. The poultry industry is one of the principal phases of the state's agriculture, and dairying occupies a prominent place.

The oldest U. S. highway of any length was built in Sussex County. The New Jersey Turnpike links New York, Pennsylvania and Delaware. Its new span at Florence over the Delaware River connects with the Pennsylvania Turnpike, giving motorists an uninterrupted road from New York to Chicago. Garden State Parkway (toll) is now open from Cape May to the N. Y. Thruway (173 mi.).

Its fortunate topography and geographic location make New Jersey a popular resort state with over 100 resort areas.

NEW MEXICO

Capital: Santa Fe.

Governor: Edwin L. Mechem, Rep. (to Jan. 1959).

Organized as territory: Sept. 9, 1850.

Entered Union & (rank): Jan. 6, 1912 (47).

Present constitution adopted: 1912.

Motto: *Crescit eundo* (It grows as it goes).

State flower: Yucca (1927).

State tree: Piñon (1949).

State bird: Road runner (1949).

State fish: Cutthroat trout (1955).

State colors: Flaming red and golden orange (1915).

State song: "O, Fair New Mexico" (1916).

Nicknames: Land of Enchantment; Sunshine State.

Origin of name: From the country of Mexico.

1940 population & (rank): 531,818 (42).

1950 population & (rank): 681,187 (39).

1956 estimated population: 838,600.

Area & (rank): 121,666 sq. mi. (4).

Geographic center: In Torrance Co., 12 mi. W of S of Willard.

Number of counties: 32.

Largest cities (1950 Census): Albuquerque (96,815); Santa Fe (27,998); Roswell (25,738); Carlsbad (17,975); Clovis (17,318).

State forests: None.

State parks: 6 (16,018 ac.).

State general revenue (1956): \$160,588,000.

State general expenditure (1956): \$144,736,000.

New Mexico's chief industries are mining and the raising of cattle and crops. Irrigation is vital.

The state contains the largest Indian reservation in the U. S. with over 16,000,000 acres, inhabited by the Navajo tribe. The Apaches and Utes live in three other reservations in this state (the Jicarilla Apache, at Horse Lake; the Mescalero Apache, north-east of Alamogordo; the Navajo, in San Juan and McKinley counties; and the Southern Ute, in the northern part of San Juan County). Carlsbad Caverns, the largest in the world, attract many visitors annually. The highest golf course in the world, over 9,000 feet above sea level, is near Alamogordo.

The state's dry and healthful climate makes it a great recuperative mecca for tuberculars. Santa Fe, the oldest seat of government in the U. S., was founded by the Spaniards in 1609-10.

Los Alamos is the site of an atomic-energy laboratory. The first atomic explosion in history was at the Alamogordo air base.

NEW YORK

Capital: Albany.

Governor: W. Averell Harriman, Dem. (to Jan. 1959).

Entered Union & (rank): July 26, 1788 (11).

Present constitution adopted: 1777 (last revised 1938).

Motto: *Excelsior* (Ever Upward).

State flower: Rose (1955).

State tree: Sugar maple (1956).
 State bird: Unofficial.
 State song: None.
 Nickname: Empire State.
 Origin of name: In honor of the English Duke of York.
 1940 population & (rank): 13,479,142 (1).
 1950 population & (rank): 14,830,192 (1).
 1956 estimated population: 16,195,000.
 Area & (rank): 49,576 sq. mi. (29).
 Geographic center: In Madison Co., 6 mi. E of S of Oneida.
 Number of counties: 62.
 Largest cities (1950 Census): New York (7,891,957); Buffalo (580,132); Rochester (332,488); Syracuse (220,583); Yonkers (152,798).
 State Forest Preserves: Adirondacks, 2,233,802 ac.; Catskills, 234,611 ac.
 State parks: 82 (199,500 ac.).
 State general income (1956): \$1,368,600,000.
 State general outgo (1956): \$1,314,600,000.

New York, with the great metropolis of New York City, is the spectacular nerve center of the nation. It leads in population, manufacturing, foreign trade, commercial and financial transactions, book and magazine publishing, theatrical production, etc.

New York City is not only a national but an international leader. It is the busiest seaport in the world; New York International Airport is the largest in the world. First in manufacturing since 1824, the city today has a gigantic clothing and fur industry and also makes chemicals, paints, drugs, machinery, paper, wood and textile products and houses the tallest buildings in the world. Nearly all the rest of the state's manufacturing is done along the Hudson River north to Albany and through the Mohawk Valley and Central New York to Buffalo. It includes planes, heavy and light electrical equipment, locomotives, radio and TV sets, auto bodies and parts, washing machines, typewriters, photographic and optical equipment, shirts and flour. Dairying, truck gardening, and the raising of potatoes, onions and cabbage keep the New York farmer prosperous. Wine-making is a major industry in the state.

New York's extremely rapid commercial growth may be partly attributed to Governor De Witt Clinton who pushed through the construction of the Erie Canal (Buffalo to Albany) which was opened in 1825. Today, the 427 mile N. Y. Thruway connects New York City and Buffalo.

The convention and tourist business is the state's fifth greatest source of income.

For a short time, New York City was the U. S. Capital and George Washington was inaugurated there as the first President on April 30, 1789.

Henry Hudson explored New York in 1609 in his trip up the river later named in his honor. On the basis of his explorations, the Dutch bought the island of Manhattan for \$24 from the Indians in 1626.

11 NORTH CAROLINA

Capital: Raleigh.
 Governor: Luther H. Hodges, Dem. (to Jan. 1961).
 Entered Union & (rank): Nov. 21, 1789 (12).

Seceded from Union: May 20, 1861.
 Re-entered Union: July 20, 1868.
 Present constitution adopted: 1876.
 Motto: *Esse quam videri* (To be rather than to seem) (1893).

State flower: Dogwood (1941).
 State bird: Cardinal (1943).
 State song: "The Old North State" (1927).
 State colors: red and blue (1945).
 Nickname: Tar Heel State.
 Origin of name: In honor of Charles I of England.

1940 population & (rank): 3,571,623 (11).
 1950 population & (rank): 4,061,929 (10).
 1956 estimated population: 4,423,000.
 Area & (rank): 52,712 sq. mi. (27).
 Geographic center: In Chatham Co., 10 mi. NW of Sanford.

Number of counties: 100.
 Largest cities (1950 Census): Charlotte (134,042); Winston-Salem (87,811); Greensboro (74,389); Durham (71,311); Raleigh (65,679).
 State forests: 1.
 State parks: 11 (35,768 ac.).
 State revenue (all funds) (1955-56): \$366,058,333.

State expenditure (all funds) (1955-56): \$337,829,737.

North Carolina is the nation's largest tobacco and textile producer. It holds first place in the Southeast in population and in the value of its industrial and agricultural production. This production is highly diversified, with furniture, chemicals and paper constituting enormous industries. Tobacco, corn, cotton, hay, peanuts and truck and vegetable crops are of major importance.

The state leads the South in social and economic reforms. Its educational pay scale is the same for white and Negro teachers.

There are 19 state and national parks and forests, including the Great Smoky Mountains National Park, the Blue Ridge Parkway and the new Cape Hatteras National Seashore. Mt. Mitchell, on the Parkway near Asheville, is the highest mountain in the Eastern U. S. (6,684 ft. above sea level).

The largest military reservation in the U. S. (Fort Bragg) and the largest Marine amphibious training base (Camp Lejeune) are in North Carolina.

The first English colony in America was established on Roanoke Island in 1585. Virginia Dare, born there in 1587, was the first child of English parentage born in America.

NORTH DAKOTA

Capital: Bismarck.
 Governor: John E. Davis, Rep. (to Jan. 1959).
 Organized as territory: Mar. 2, 1861.
 Entered Union & (rank): Nov. 2, 1889 (39).
 Present constitution adopted: 1889.

Motto: Liberty and union, now and forever: one and inseparable.
 State flower: Wild prairie rose (1907).
 State tree: American elm (1947).
 State bird: Western meadow lark (1947).
 State song: "North Dakota Hymn" (1947).
 Nickname: Sioux State; Flickertail State.
 Origin of name: From the Dakotah tribe, meaning "allies."
 1940 population & (rank): 641,935 (39).

1950 population & (rank): 619,636 (41).

1956 estimated population: 657,000.

Area & (rank): 70,665 sq. mi. (16).

Geographic center: In Sheridan Co., 5 mi. SW of McClusky.

Number of counties: 53.

Largest cities (1950 Census): Fargo (38,256);

Grand Forks (26,836); Minot (22,032); Bismarck (18,640); Jamestown (10,697).

State forests: None.

State parks: 5 (2,981 ac.).

State collections (1955): \$60,162,232.

State disbursements (1955): \$60,108,524.

North Dakota, politically progressive, operates the only state-owned bank, flour mill and grain elevator in the nation. The state owes its main activity to agriculture with over 87 per cent of its acreage devoted to the growth of barley, wheat, rye, oats and livestock. Most of its manufacturing consists of dairy products.

The finest farming land is in the Red River Valley, celebrated in song. Cattle raising is centered in the Missouri Valley.

"Number One Northern Hard," a wheat first grown in this state, still brings premium prices for its excellence of quality.

The completion of Garrison Dam on the Missouri River will result in extensive irrigation and the production of 400,000 kw. of electricity for use in the Missouri Basin areas.

In 1951, oil was discovered near Tioga by the Amerada Petroleum Corp. Geologists believe that the state holds two-thirds of our lignite.

The geographic center of the North American continent is located in Pierce County, latitude 48°10'N, longitude 100°10'W.

OHIO

Capital: Columbus.

Governor: C. William O'Neill, Rep. (to Jan. 1959).

Entered Union & (rank): Mar. 1, 1803 (17).

Present constitution adopted: 1851.

Motto: *Imperium in imperio* (An empire within an empire) (unofficial).

State flower: Scarlet carnation (1904).

State bird: Cardinal (1933).

State song: None.

Nickname: Buckeye State.

Origin of name: From an Iroquoian word meaning "great river."

1940 population & (rank): 6,907,612 (4).

1950 population & (rank): 7,946,627 (5).

1957 estimated population: 9,050,000.

Area & (rank): 41,222 sq. mi. (34).

Geographic center: In Delaware Co., 25 mi. N of Columbus.

Number of counties: 88.

Largest cities (1950 Census): Cleveland (914,808); Cincinnati (503,998); Columbus (375,901); Toledo (303,616); Akron (274,605).

State forests: 20 (145,281 ac.).

State parks: 55 (22,074 ac.).

State general revenue (1956): \$1,204,317,462.

State general expenditure (1956): \$996,174,329.

With vast coal and oil fields on the one hand, with Great Lakes iron ore close by on the other, Ohio automatically developed

into one of the nation's greatest industrial states. The vast and varied factory output of its cities runs from wire, nails, nuts, bolts, paper, radios, cash registers, golf clubs, refrigerators to motors of all kinds and sizes. Cleveland is one of the world's largest handlers of iron ore. Toledo is the nation's largest shipper of coal. Akron makes most of the automobile tires used in the U. S.

Ohio's thousands of factories almost overshadow its importance in two other basic industries—mining and agriculture. Its fertile soil produces soy beans, corn, wheat, grapes and tobacco. Dairying and greenhouse products are important. Mining is centered in coal, oil, sand, gravel and clay.

Ohio has sent to the White House eight men, six of whom were elected from that state and two of whom were born in Ohio but elected from other states.

In 1749, Céleron, a French officer, reached the Ohio River from Canada and claimed the area for the French, disregarding the grants of the British Kings.

OKLAHOMA

Capital: Oklahoma City.

Governor: Raymond D. Gary, Dem. (to Jan. 1959).

Organized as territory: May 2, 1890.

Entered Union & (rank): Nov. 16, 1907 (46).

Present constitution adopted: 1907.

Motto: *Labor omnia vincit* (Labor conquers all things).

State flower: Mistletoe (1893).

State tree: Redbud (1937).

State bird: Scissor-tailed Flycatcher (1951).

State colors: Green and white (1915).

State song: "Oklahoma" (1953).

Nickname: Sooner State.

Origin of name: From two Choctaw Indian words meaning "red people."

1940 population & (rank): 2,336,434 (22).

1950 population & (rank): 2,233,351 (25).

1956 estimated population: 2,237,000.

Area & (rank): 69,919 sq. mi. (17).

Geographic center: In Oklahoma Co., 8 mi. N of Oklahoma City.

Number of counties: 77.

Largest cities (1950 Census): Oklahoma City (243,504); Tulsa (182,740); Muskogee (37,289); Enid (36,017); Lawton (34,757).

State forests: None.

State parks: 14 (52,086 ac.).

State general revenue (1956): \$325,017,839.*

State general expenditure (1956): \$340,728,806.

* Not including \$22,415,928 "non-revenue receipts."

Oil has made Oklahoma a rich state and Tulsa one of the world's wealthiest cities per capita. The smelting of zinc, oil refining, meat packing and flour milling are its chief factory industries. Wheat, corn, oats, cotton, sorghums and potatoes are its agricultural crops of chief importance.

In 1834, Oklahoma was set aside as Indian Territory. It remained so until Apr. 22, 1889, when the first opening to homestead settlement occurred. On that one day, 50,000 people swarmed in, and the term "sooners" was born to apply to those who had sneaked into the state sooner than the noon deadline. A series of land openings by "runs" and lot-

teries extended through 1901, and sales by sealed bid of remaining lands were held in 1906 and 1910.

The state is one of the two in the nation (the other is Mississippi) which prohibits the sale of hard liquor.

OREGON

Capital: Salem.

Governor: Robert D. Holmes, Dem. (to Jan. 1959).

Organized as territory: Aug. 14, 1848.

Entered Union & (rank): Feb. 14, 1859 (33).

Present constitution adopted: 1859.

Motto: The Union (1957).

State flower: Oregon grape (1899).

State tree: Douglas fir (1939).

State bird: Western meadow lark (1927).

State song: "Oregon, My Oregon" (1927).

Nickname: Beaver State.

Origin of name: Unknown. However, it is generally accepted that the name, first used by Jonathan Carver in 1778, was taken from the writings of Maj. Robert Rogers, an English army officer.

1940 population & (rank): 1,089,684 (34).

1950 population & (rank): 1,521,341 (32).

1956 estimated population: 1,734,650.

Area & (rank): 96,981 sq. mi. (9).

Geographic center: In Crook Co., 25 mi. E of S of Prineville.

Number of counties: 36.

Largest cities (1950 Census): Portland (373,628); Salem (43,140); Eugene (35,879); Medford (17,305); Corvallis (16,207).

State forests: 719,405 ac. in 14 counties.

State parks: 163 (57,487 ac.).

State general revenue (1956): \$231,343,000.

State general expenditure (1956): \$234,079,000.

Oregon, with the greatest U. S. reserve of standing timber, has a billion-dollar forestry industry. Its salmon fishing industry, centered at Astoria at the mouth of the Columbia River, is one of the world's largest.

In agriculture, the state leads in growing peppermint, holly, lily bulbs, caneberries, filberts, Blue Lake beans and cover seed crops, and also raises strawberries, hops, wheat and other grains, sugar beets, potatoes, green peas, fiber flax, dairy products, livestock and poultry.

Oregon's coast is lush and green with heavy rainfall and is noted for its scenic beauty. Crater Lake National Park, Mount Hood and Bonneville Dam on the Columbia are other tourist attractions.

With the low-cost electric power provided by Bonneville Dam, McNary Dam and other dams in the Pacific Northwest, Oregon has developed steadily as a manufacturing state. Leading manufactures are lumber and lumber products, metalwork, machinery, aluminum, chemicals, paper and food processing.

PENNSYLVANIA

Capital: Harrisburg.

Governor: George M. Leader, Dem. (to Jan. 1959).

Entered Union & (rank): Dec. 12, 1787 (2).

Present constitution adopted: 1874.

Motto: Virtue, liberty and independence.

State flower: Mountain laurel (1933).

State tree: Hemlock (1931).

State bird: Ruffed grouse (1931).

State colors: Blue and gold.

State song: None.

Nickname: Keystone State.

Origin of name: In honor of Adm. Sir William Penn, father of William Penn. It means "Penn's Woodland."

1940 population & (rank): 9,900,180 (2).

1950 population & (rank): 10,498,012 (3).

1956 estimated population: 10,964,000.

Area & (rank): 45,333 sq. mi. (32).

Geographic center: In Center Co., 2 1/2 mi. SW of Bellefonte.

Number of counties: 67.

Largest cities (1950 Census): Philadelphia (2,071,605); Pittsburgh (676,806); Erie (130,803); Scranton (125,536); Reading (109,320).

State forests: 20 (1,857,447 ac.).

State parks: 45 (72,000 ac.).

State revenue (Est. 1954-55): \$1,358,288,000.

State expenditure (Est. 1954-55): \$1,273,000,000.

From the steel mills of Pittsburgh through the mid-state coal mines and oil wells to the shipyards and factories of Philadelphia, Pennsylvania bristles with heavy industry. Approximately 30% of all American iron and steel is made in Pennsylvania. Other manufactures include locomotives, boilers, engines, blast furnaces, trucks, busses, wire, textiles, knit goods and nylon and rayon products. Virtually all of the U. S. anthracite (hard coal) deposits are located in Pennsylvania.

Agricultural products include apples, peaches, potatoes, corn, hay, barley, wheat, buckwheat and tobacco.

Pennsylvania is rich in historical lore. Philadelphia was the seat of the Federal government almost continuously from 1776 until 1800, and there the Declaration of Independence was signed and the Constitution drawn up. Valley Forge, of the Revolution, and Gettysburg, the turning-point of the Civil War, are both in Pennsylvania. The Liberty Bell stands in Independence Square in Philadelphia.

Henry Hudson sailed into Delaware Bay in 1609. In 1681, William Penn, the Quaker, founded its first colony.

RHODE ISLAND

Capital: Providence.

Governor: Dennis J. Roberts, Dem. (to Jan. 1959).

Entered Union & (rank): May 29, 1790 (13).

Present constitution adopted: 1843.

Motto: Hope.

State flower: Violet (unofficial).

State tree: Maple (unofficial).

State bird: Rhode Island Red (official).

State colors: Blue, white and gold (in state flag).

Song: "Rhode Island" (1946).

Nickname: Little Rhody.

Origin of name: From the Greek island of Rhodes.

1940 population & (rank): 731,346 (36).

1950 population & (rank): 791,896 (36).

1956 estimated population: 828,000.

Area & (rank): 1,214 sq. mi. (48).
 Geographic center: In Kent Co., 2.8 mi. S. by W. of Crompton.
 Number of counties: 5.
 Largest cities (1950 Census): Providence (248,674); Pawtucket (81,436); Cranston (55,060); Woonsocket (50,211); Warwick (43,028).
 State forests: 9 (15,600 ac.).
 State parks: 11 (5,700 ac.).
 State general revenue (1955): \$67,211,154.
 State general expenditure (1955): \$67,889,244.

Rhode Island, with the greatest density of population barring the District of Columbia, boasts the highest proportion of industrial workers of all the states. Leading industry is textiles, largely concentrated in Pawtucket, Providence and Woonsocket.

Providence is also one of the largest U. S. jewelry centers, and is important in the production of machinery and metal products.

With more than eight-tenths of the population living in urban areas, adjacent parts of the state are interested in dairying, poultry and truck farming. Nursery and greenhouse products and stock, potatoes, corn, apples, oats and hay lead the crop list. Of the state's land area, about one-seventh is farm cropland and open pasture; two-thirds is forested.

Newport is the site of the Naval War College and was long a show place for the luxurious summer homes built by some of New York's wealthiest people. The U. S. Naval Air Station is at Quonset in the town of North Kingstown.

Roger Williams founded Providence, and subsequently Rhode Island, in 1636 after he had been banished from Massachusetts for nonconformance to religious doctrine.

SOUTH CAROLINA

Capital: Columbia.
 Governor: George B. Timmerman, Jr., Dem. (to Jan. 1959).
 Entered Union & (rank): May 23, 1788 (8).
 Seceded from Union: Dec. 20, 1860.
 Re-entered Union: July 18, 1868.
 Present constitution adopted: 1895.
 Mottos: *Animus optibusque parati* (Prepared in mind and resources) and *Dum spiro spero* (While I breathe, I hope).
 State flower: Carolina yellow jessamine (1924).
 State tree: Palmetto tree (1939).
 State bird: Carolina wren (1948).
 State song: "Carolina" (1911).
 Nickname: Palmetto State.
 Origin of name: In honor of Charles II of England.
 1940 population & (rank): 1,899,804 (26).
 1950 population & (rank): 2,117,027 (27).
 1956 estimated population: 2,353,000.
 Area & (rank): 31,055 sq. mi. (39).
 Geographic center: In Richland Co., 13 mi. SE of Columbia.
 Number of counties: 46.
 Largest cities (1950 Census): Columbia (86,914); Charleston (70,174); Greenville (58,161); Spartanburg (36,795); Rock Hill (24,502).
 State forests: 4 (123,000 ac.).
 State parks: 22 (46,000 ac.).
 State total revenue (1955-56): \$178,050,102.
 State general expenditure (1955-56): \$168,226,280.

Once primarily agricultural, South Carolina has built so many big cotton textile mills that today the state's factories double the output of its farms in cash value. Agriculture has not, however, been completely replaced and today its chief crops are cotton, tobacco, peaches, corn, hay, oats, sweet potatoes and peanuts which are enhanced by the recent development of modern soil-conservation methods. Charleston makes asbestos, wood, pulp and steel products.

Civil War hostilities were started in this state at Charleston, when, on April 12, 1861, South Carolina men bombarded and captured Fort Sumter. In Charleston harbor the first submarine was used in warfare.

Vasquez de Ayllon, who came from Santo Domingo with about 500 settlers in 1526, made the first attempt to colonize this state but the expedition was later wiped out by Indians. In succeeding years, Spanish attempts were successful.

SOUTH DAKOTA

Capital: Pierre.
 Governor: Joseph J. Foss, Rep. (to Jan. 1959).
 Organized as territory: Mar. 2, 1861.
 Entered Union & (rank): Nov. 2, 1889 (40).
 Present constitution adopted: 1889.
 Motto: Under God the people rule.
 State flower: American pasqueflower (1903).
 State tree: Black Hills spruce (1947).
 State bird: Ring-necked pheasant (1943).
 State animal: Coyote (1949).
 State colors: Blue and gold (in state flag).
 State song: "Hail! South Dakota" (1943).
 Nicknames: Sunshine State; Coyote State.
 Origin of name: Same as for North Dakota.
 1940 population & (rank): 642,961 (38).
 1950 population & (rank): 652,740 (40).
 1956 estimated population: 696,000.
 Area & (rank): 77,047 sq. mi. (15).
 Geographic center: In Hughes Co., 8 mi. NE of Pierre.
 Number of counties: 68 (64 county governments).
 Largest cities (1950 Census): Sioux Falls (52,696); Rapid City (25,310); Aberdeen (21,051); Huron (12,788); Watertown (12,699).
 State forests: 4 (86,000 ac.).
 State parks: 10 (80,000 ac.).
 State general revenue (1955): \$79,472,099.
 State general expenditure (1955): \$78,995,108.†

*The acreage shown includes 46 recreation areas and 31 roadside parks in addition to the 10 state parks.

†Does not include \$8,934,000 in bond payments.

Seventy-five per cent of the population of South Dakota is actively interested in agriculture. Its leading crops are rye, barley, oats, corn, wheat. Cattle raising and dairying are its stronger industries. The richest U. S. gold mine, the Homestake, is at Lead.

The Black Hills, a great tourist attraction, are the highest mountains east of the Rockies. Mt. Rushmore, in this group, is celebrated for the likenesses of Washington, Jefferson, Lincoln and Theodore Roosevelt, which were carved in stone by the late Gutzon Borglum. The Badlands offer very scenic masses of bare rock and clay unrelieved by any vegetation. It was in this state that the Sioux Indians, angered at the influx of the white men who were search-

ing for gold, started the hostilities which ended in Custer's Massacre, on June 25, 1876, in Montana.

TENNESSEE

Capital: Nashville.

Governor: Frank G. Clement, Dem. (to Jan. 1959).

Entered Union & (rank): June 1, 1796 (16).

Seceded from Union: June 24, 1861.

Re-entered Union: July 24, 1866.

Present constitution adopted: 1870, amended for first time 1953.

Motto: Agriculture, commerce.

State flower: Iris (1933).

State tree: Tulip poplar (1947).

State bird: Mockingbird (1933).

Songs: "My Homeland, Tennessee" (1925) and "When It's Iris Time in Tennessee" (1935).

Nickname: Volunteer State.

Origin of name: From the name of the ancient capital of the Cherokee tribe.

1940 population & (rank): 2,915,841 (15).

1950 population & (rank): 3,291,718 (16).

1956 estimated population: 3,466,000.

Area & (rank): 42,246 sq. mi. (33).

Geographic center: In Rutherford Co., 5 mi. NE of Murfreesboro.

Number of counties: 95.

Largest cities (1950 Census): Memphis (396,000); Nashville (174,307); Chattanooga (131,041); Knoxville (124,769); Jackson (30,207).

State forests: 14 (154,752 ac.).

State parks: 18 (72,966 ac.).

State general revenue (1955-56): \$365,667,000.

State general expenditure (1955-56): \$317,603,000.

Tennessee won world prominence in 1945, for the atom bomb was made possible by the Clinton Engineer Works at Oak Ridge.

The state is now predominately industrial, with production including chemicals, food, textiles, virgin aluminum, shoes, lumber products, and metal work. Mineral products include phosphates, zinc, copper, lead, sinter iron, pyrites, high-grade pottery clay, coal and marble. Tennessee's agricultural production includes livestock, cotton, corn, tobacco, hay, dairy products, poultry and eggs.

Tennessee is the home of TVA which operates 29 dams and distributes power from 3 dams on the Cumberland River maintained by the Army Corps of Engineers. Benefits of flood control, navigation and electrical power reach into 6 other states (Kentucky, Alabama, North Carolina, Georgia, Virginia, and Mississippi). The Tennessee River, already the most completely used major river in the world, is insufficient to supply energy needs, and the power system is being doubled by use of steam generating plants.

TEXAS

Capital: Austin.

Governor: Price Daniel, Dem. (to Jan. 1959).

Entered Union & (rank): Dec. 29, 1845 (28).

Seceded from Union: Mar. 2, 1861.

Re-entered Union: Mar. 30, 1870.

Present constitution adopted: 1876.

Motto: Friendship.

State flower: Bluebonnet (1901).

State tree: Pecan (1919).

State bird: Mockingbird (1927).

State song: "Texas, Our Texas" (1930).

Nickname: Lone Star State.

Origin of name: From an Indian word meaning "friends."

1940 population & (rank): 6,414,824 (6).

1950 population & (rank): 7,711,194 (6).

1956 estimated population: 8,925,000.

Area & (rank): 267,339 sq. mi. (1).

Geographic center: In McCulloch Co., 20 mi. NE of Brady.

Number of counties: 254.

Largest cities (1950 Census): Houston (596,163); Dallas (434,462); San Antonio (408,442); Fort Worth (278,778); Austin (132,459).

State forests: 5 (6,510 ac.).

State parks: 48.

State revenue receipts (1955-56): \$913,422,792.

State governmental cost (1955-56): \$805,686,551.

Big, sprawling, vigorous Texas, comprising one-twelfth of the entire area of the United States, is the richest political subdivision in the world with the possible exception of the Russian Ukraine, and is the only state that may, by Congressional statute, divide into five parts if it so desires. There is very little possibility of this ever being done because Texas and Texans live by its bigness. Texas is a natural leader in oil, natural gas, cotton, cattle, helium, sulfur, sheep, wool, onions and turkeys.

The distance from El Paso to Beaumont is a greater distance than from New York to Chicago. Texas supports possibly the most ardent local enthusiasts in the nation, who are always quick to boast of her.

Over the Neches River, at Port Arthur, is the most elevated highway bridge over tidal waters in the world.

Cabeza de Vaca explored the state in 1528. Since 1685, it has been under the jurisdiction of 6 separate governments: those of France, Spain, Mexico, the Republic of Texas, the Confederacy and the United States.

UTAH

Capital: Salt Lake City.

Governor: George D. Clyde, Rep. (to Jan. 1961).

Organized as territory: Sept. 9, 1850.

Entered Union & (rank): Jan. 4, 1896 (45).

Present constitution adopted: 1896.

Motto: Industry.

State flower: Sego lily (1911).

State tree: Blue spruce (1933).

State bird: Seagull (1955).

State emblem: Beehive.

State song: "Utah, We Love Thee."

Nickname: Beehive State.

Origin of name: From the Ute tribe, meaning "people of the mountains."

1940 population & (rank): 550,310 (41).

1950 population & (rank): 688,862 (38).

1956 estimated population: 812,000.

Area & (rank): 84,916 sq. mi. (10).

Geographic center: In Sanpete Co., 3 mi. N of Mantle.

Number of counties: 29.

Largest cities (1950 Census): Salt Lake City (182,121); Ogden (57,112); Provo (28,937); Logan (16,832); Murray (9,006).

State forests: None.

State parks: 3 (10 ac.).

State general revenue (1954-55): \$110,629,406.*

State general expenditure (1954-55): \$115,672,422.*

* State began period with \$36,300,519 balance or surplus; finished with \$31,257,503.

Utah, rich in natural resources, has long been recognized for its copper, gold, silver, lead and zinc. Also, it produces all the elements necessary for the manufacture of steel: iron, lime, dolomite, fluorspar, manganese and coal for coking. Uranium mining has recently become a major industry. The state is also developing an oil industry, and this resource may become a major factor in Utah's economy.

Utah's crops requiring extensive irrigation include sugar beets, potatoes, hay, onions and wheat. Various garden crops, such as beans, peas and tomatoes, and fruits, such as pears, peaches, apples and apricots, make up an ever-growing industry. Eggs and commercial poultry are also among the products of Utah.

Brigham Young led the Mormons into the area in 1847. Six times in the next forty years, the area applied for statehood and was refused because polygamy was practiced. In 1896, when polygamy was abandoned by the Mormon Church, Utah was admitted into the Union.

Great Salt Lake, lying in the north central area, has long been a world wonder. It has no known outlet, and its salt content is about six times that of the ocean.

VERMONT

Capital: Montpelier.

Governor: Joseph B. Johnson, Rep. (to Jan. 1959).

Entered Union & (rank): Mar. 4, 1791 (14).

Present constitution adopted: 1793.

Motto: Vermont—freedom and unity.

State flower: Red clover (1894).

State tree: Sugar maple (1949).

State bird: Hermit thrush (1941).

State song: "Hail to Vermont" (1937).

Nickname: Green Mountain State.

Origin of name: From the French, meaning "green mountain."

1940 population & (rank): 359,231 (46).

1950 population & (rank): 377,747 (45).

1956 estimated population: 370,000.

Area & (rank): 9,609 sq. mi. (42).

Geographic center: In Washington Co., 4.5 mi. SSE of Roxbury Village.

Number of counties: 14.

Largest cities (1950 Census): Burlington (33,155); Rutland (17,659); Barre (10,922); Montpelier (8,599); St. Albans (8,552).

State forests: 26 (80,697 ac.).

State parks: 25 (6,641 ac.).

State revenue (1956): \$52,545,065.

State expenditure (1956): \$55,933,705.

Vermont, the only New England state without a seacoast (and the last to be settled because of this), leads the nation in

marble, granite, asbestos and maple syrup production. In ratio to population it keeps more dairy cows than any other state. Vermont's soil is devoted to dairying, truck farming and fruit growing, its rugged area precluding extensive farming. This same quality, however, along with a bracing dry climate, makes the state popular as a summer resort and as a center of winter sports. Two-thirds of the total land area of the state is classified as forest land.

From 1777 to 1791, Vermont was an independent state of indefinite status with some national perquisites and then was the first state after the original thirteen to join the Union. It was also the first state to forbid slavery and the first to adopt universal manhood suffrage (1777). Vermont has been Republican since 1854; only Georgia on the Democratic side ties that record for consistency.

VIRGINIA

Capital: Richmond.

Governor: Thomas B. Stanley, Dem. (to Jan. 1958).

Entered Union & (rank): June 25, 1788 (10).

Seceded from Union: Apr. 17, 1861.

Re-entered Union: Jan. 27, 1870.

Present constitution adopted: 1902.

Motto: *Sic semper tyrannis* (Thus always to tyrants).

State flower: American dogwood (1918).

State bird: Cardinal.

State song: "Carry Me Back to Old Virginny" (1940).

Nicknames: The Old Dominion; Cavalier State.

Origin of name: In honor of Elizabeth, "Virgin Queen" of England.

1940 population & (rank): 2,677,773 (19).

1950 population & (rank): 3,318,680 (15).

1956 estimated population: 3,651,000.

Area & (rank): 40,815 sq. mi. (35).

Geographic center: In Appomattox Co., 11 mi. S of E of Amherst.

Number of counties: 98, plus 32 independent cities.

Largest cities (1950 Census): Richmond (230,310); Norfolk (213,513); Roanoke (91,921); Portsmouth (80,039); Alexandria (61,787).

State forests: 6 (45,072 ac.).

State parks: 8 (24,073 ac.).

State revenue (1956): \$444,444,422.

State expenditure (1956): \$443,700,183.

The history of America is closely tied to that of Virginia, particularly in the colonial period. Jamestown, founded in 1607, was the first permanent English settlement in North America, and slavery was introduced there in 1619. The surrenders ending both the American Revolution and the Civil War occurred in Virginia. The state is called the "Mother of Presidents" because 8 chief executives of the U. S. were born there.

Points of historic interest include Mount Vernon and other places associated with Washington; Monticello, home of Jefferson; Stratford, home of the Lees; Richmond, capital of the Confederacy and of Virginia; and Williamsburg, the restored Colonial capital.

Among Virginia's natural wonders are the famous Natural Bridge and the limestone caverns of the Shenandoah Valley. The most important natural resources are beds of bituminous coal, forest lands, oyster beds and commercial fisheries.

Manufacturing includes chemicals, textiles, lumber and wood products, foods, transportation equipment (including shipbuilding), apparel and furniture. Agricultural products include livestock, poultry, dairy goods, tobacco, apples, grains and hay crops.

WASHINGTON

Capital: Olympia.

Governor: Albert D. Rosellini, Dem. (to Jan. 1961).

Organized as territory: Mar. 2, 1853.

Entered Union & (rank): Nov. 11, 1889 (42).

Present constitution adopted: 1889.

Motto: *Al-Ki* (Indian word meaning Bye and Bye).

State flower: Rhododendron (1949).

State tree: Hemlock (1947).

State bird: Goldfinch (1951).

State colors: Green and gold (1925).

State song: "Washington's Song" (1909).

Nicknames: Evergreen State; Chinook State.

Origin of name: In honor of Geo. Washington.

1940 population & (rank): 1,736,191 (30).

1950 population & (rank): 2,378,963 (23).

1956 estimated population: 2,651,900.

Area & (rank): 68,192 sq. mi. (19).

Geographic center: In Chelan Co., 10 mi. S of W of Wenatchee.

Number of counties: 39.

Largest cities (1950 Census): Seattle (467,591);

Spokane (161,721); Tacoma (143,673);

Yakima (38,486); Bellingham (34,112).

State forests: 2 (290,000 ac.).

State parks: 75 (65,667 ac.).

State revenue, all funds (1955-56): \$471,933,775.

State expenditures, all funds (1955-56): \$438,711,366.

Washington is one of the leaders in lumber production. Its rugged surface is rich in stands of Douglas fir, yellow and white pine, spruce, larch and cedar. The state's other first is apples. Food and lumber products and a wide variety of goods flow from Washington factories.

The Columbia River contains one third of the potential water power of America. Largest dam is Grand Coulee, greatest power producer in the world. Other mighty dams on the Columbia include Chief Joseph, Rock Island, Bonneville, McNary and The Dalles, which are shared with Oregon. There are 96 dams in Washington, built for various purposes including power, irrigation, flood control, water storage, etc.

The Hanford Engineer Works, north of Pasco, has been set up as the world's first full-scale plant for atom bombs.

WEST VIRGINIA

Capital: Charleston.

Governor: Cecil H. Underwood, Rep. (to Jan. 1961).

Entered Union & (rank): June 20, 1863 (35).

Present constitution adopted: 1872.

Motto: *Montani semper liberi* (Mountaineers always free).

State flower: Rhododendron (1903).

State tree: Sugar maple (1949).

State bird: Cardinal (1949).

State animal: Black bear.

State colors: Blue and gold (unofficial).

State songs: "West Virginia, My Home Sweet Home" (approved 1947 as one of songs of state); "West Virginia Hills" (by custom).

Nickname: Mountain State.

Origin of name: Same as for Virginia.

1940 population & (rank): 1,901,974 (25).

1950 population & (rank): 2,005,552 (29).

1956 estimated population: 1,983,000.

Area & (rank): 24,181 sq. mi. (40).

Geographic center: In Braxton Co., 4 mi. E of Sutton.

Number of counties: 55.

Largest cities (1950 Census): Huntington (86,353); Charleston (73,501); Wheeling (58,891); Clarksburg (32,014); Parkersburg (29,684).

State forests: 10 (96,418 ac.).

State parks: 21 (38,752 ac.).

State general revenue (1956-57): \$95,515,807.

State general expenditure (1956-57): \$92,922,304.

Mountainous West Virginia is the coal mining leader of the nation. The state also ranks high in steel, glass, aluminum and chemical manufacture, natural gas, oil, quarry products and hardwood lumber. Cattle is the main agricultural product. Leading crops include wheat, corn, oats, hay, tobacco and fruit.

West Virginia was created when its residents refused to secede from the Union and severed the state from Virginia during the Civil War era.

Like many mountain states, West Virginia has an equable climate without extremes. White Sulphur Springs, in Greenbrier County, is a famous health resort. Mountain streams give the state one of the highest U. S. water-power potentials.

WISCONSIN

Capital: Madison.

Governor: Vernon W. Thomson, Rep. (to Jan. 1959).

Organized as territory: Apr. 20, 1836.

Entered Union & (rank): May 29, 1848 (30).

Present constitution adopted: 1848.

Motto: Forward.

State flower: Violet.

State tree: Sugar maple.

State bird: Robin.

State animal: Wisconsin's official "wild life" animal is the white-tailed deer. The badger continues to be the "official state animal."

State fish: Musky (Muskellunge).

State song: "On Wisconsin" (unofficial).

Nickname: Badger State.

Origin of name: French corruption of an Indian word meaning "gathering of waters."

1940 population & (rank): 3,137,587 (13).

1950 population & (rank): 3,434,575 (14).

1956 estimated population: 3,764,000.

Area & (rank): 56,154 sq. mi. (25).

Geographic center: In Wood Co., 9 mi. SE of Marshfield.

Number of counties: 71.

Largest cities (1950 Census): Milwaukee (637,392); Madison (96,056); Racine (71,193); Kenosha (54,368); Green Bay (52,735).

State forests: 8 (294,721 ac.).

State parks: 30 (18,037 ac.).

State total net revenue, all funds (1955-56): \$463,927,167.

State total net expenditure, all funds (1955-56): \$446,755,046.

Wisconsin leads the U. S. in milk and cheese production. In 1955, the state produced 13% of the nation's total output of milk. Other important farm products are: potatoes, cabbage, maple sugar, cranberries and cherries. The state ranks first in producing peas, corn and beets for canning.

About 40 years ago Wisconsin's forests became exhausted, but in recent years phenomenal strides in reforestation have been made. The chief industrial products of the state are automobiles, machinery, furniture, paper and beer.

Wisconsin pioneered in social legislation, providing pensions for the blind (1907), aid to dependent children (1913) and old-age assistance (1925). In 1932, it was the first state to enact an unemployment compensation law. In labor legislation, the state has also pioneered in important laws, among them the first workmen's compensation law actually to take effect. Wisconsin had the first state-wide primary-election law and the first successful income-tax law.

WYOMING

Capital: Cheyenne.

Governor: Millward L. Simpson, Rep. (to Jan. 1959).

Organized as territory: July 25, 1868.

Entered Union & (rank): July 10, 1890 (44).

Present constitution adopted: 1890.

Motto: *Cedant arma togae* (Let arms yield to the gown).

State flower: Indian paintbrush (1917).

State tree: Cottonwood (1947).

State bird: Meadow lark (1927).

State insignia: Bucking horse (unofficial).

State song: "Wyoming State Song" (unofficial).

Special legal holiday: Arbor Day (by governor's designation).

Nickname: Equality State.

Origin of name: From the Indian, meaning "mountains and valleys alternating"; named after the Wyoming Valley in Pa.

1940 population & (rank): 250,742 (47).

1950 population & (rank): 290,529 (47).

1956 estimated population: 321,000.

Area & (rank): 97,914 sq. mi. (8).

Geographic center: In Fremont Co., 58 mi. N of E of Lander.

Number of counties: 23, plus Yellowstone National Park.

Largest cities (1950 Census): Cheyenne (31,935); Casper (23,673); Laramie (15,581); Sheridan (11,500); Rock Springs (10,857).

State forests: None.

State parks: 2 (1,060 ac.).

State general revenue (1949-50): \$42,246,000.

State general expenditure (1949-50): \$41,618,000.

Wealthy in wool, cattle, oil and coal, Wyoming was first in U. S. history to insure woman's place in politics. In 1869, it gave women the vote and Mrs. Nellie Tayloe Ross, who held office in 1925-27, was the first U. S. woman governor.

Second in mean elevation to Colorado, Wyoming has many lures for the tourist trade, notably Yellowstone National Park. Cheyenne is famous for its annual "Frontier Days" celebration, which brings in visitors from everywhere. One of the world's largest subbituminous coal fields lies near Gillette. Big game hunting is good in many parts of the state.

SELF-GOVERNING U. S. TERRITORIES

ALASKA

Capital: Juneau.

Governor: Michael A. Stepovich (to Apr. 1961).

Organized as territory: 1912.

Territorial flower: Forget-me-not.

Territorial bird: Willow ptarmigan.

Territorial song: "Alaska's Flag."

Origin of name: Corruption of native word meaning "great country."

1939 population: 72,524.

1950 population: 128,643.

1955 estimated population: 209,000.

1939-50 population change: +77.4%.

Area: 586,400 sq. mi. (incl. Aleutians).

Geographic center (including islands): 95 mi. south of Fort Gibbon.

Largest cities (estimated 1955): Anchorage (30,000); Fairbanks (10,500); Ketchikan (7,500); Juneau (6,200).

"Seward's Folly" in 1867, when that Secretary of State arranged for its purchase from Russia for \$7,200,000. Since then Alaska has returned approximately \$3,500,000,000 worth of products to the U. S.

Canned salmon is Alaska's principal product. It mines gold, supplies all domestically mined U. S. tin and also turns out platinum, coal, antimony, silver, mercury, tungsten and chromium.

The Pribilof Islands, in the Bering Sea, are famous as the breeding ground of the Alaska fur seal, which is under careful government control. Beaver, muskrat, otter, mink and other furs also abound. Alaska's first pulp mill at Ketchikan, constructed at a cost of \$54 million, began operation in 1954.

Mt. McKinley, in the south central part, is 20,300 feet high, the tallest peak in North America. With its wild interior, still partly unexplored, this territory is a hunter's paradise. With only one person for every four square miles, Alaska is by far the most thinly

Alaska, the biggest of U. S. possessions (including the Aleutian Islands) was called

settled of U. S. lands. Sitka was its capital until 1912.

Alaska has magnificent glaciers and active volcanoes. Winter temperatures in the interior have been known to register 78° below zero. However, summer temperatures in the same area have been recorded at 99° above zero; and large parts of the territory, especially in the southeast, enjoy mild climate in both summer and winter.

Alaska's Governor is appointed by the President to a 4-year term, and there is a locally elected 2-house legislature. The territory's elected delegate to the U. S. House of Representatives has floor privileges but no vote. Legislation is pending in Congress for the admission of Alaska as a state.

The Aleutians include the following island groups (and major islands): Fox Islands (Unimak, Akutan, Unalaska, Umnak); Islands of the Four Mountains (Chuginadak, Kagamil, Carlisle, Herbert); Andreanof Islands (Atka, Tanaga, Adak, Kanaga); Rat Islands (Kiska, Amchitka, Semisopochnoi, Rat); Near Islands (Agattu, Attu). In June 1942, the Japanese occupied Attu and Kiska. However, Attu was retaken by the U. S. in May 1943; Kiska was evacuated by the Japanese in Aug. 1943 after extensive shelling and bombing of the island.

Vitus Bering, a Dane working for the Russians, and Alexei Chirikov discovered Alaska and the Aleutians in 1741.

HAWAII

Capital: Honolulu (on Oahu).

Governor: William F. Quinn.

Organized as territory: 1900.

Motto: *Ua Mau Ke Ea O Ka Aina I Ka Pono*
(The life of the land is preserved by righteousness).

Territorial flower: Hibiscus.

Territorial song: "Hawaii Pono!" (unofficial).

Territorial bird: Nene (Hawaiian goose).

Nickname: Paradise of the Pacific.

1940 population: 423,300.

1950 population: 499,794.

1940-50 population change: +18.1%.

1957 estimated population: 539,309.

Area: 6,454 sq. mi. (incl. outlying islands).

Counties: 4.

Largest cities (1950 Census): Honolulu (248,034); Hilo (27,198); Wahiawa (8,369), Kailua-Lanikai (7,740); Wailuku (7,424).

Hawaii, 2,100 miles west-southwest of San Francisco, is a 390-mile chain of islets and 8 main islands—Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, Kauai, and Niihau. Kure (Ocean) Island, an uninhabited islet in the Leeward Islands, and Palmyra, in the Line Islands, are administratively part of Hawaii.

Hawaii's temperature is mild and the soil is fertile for tropical fruits and vegetables. Cane sugar and pineapple are its chief products, approximately 75% of the world's canned pineapple being produced in the islands. Hawaii also grows coffee, rice, bananas, nuts and potatoes. Some livestock and poultry are raised. The tourist business is Hawaii's fourth largest source of income. Approximately 85% of the island's population, although racially heterogeneous, is native to the U. S.

Hawaii's highest peak, Mauna Kea, rises to 13,784 feet and is, in a sense, the world's highest mountain since it springs from an ocean floor 18,000 feet below sea level. Kilauea, on Hawaii, is one of the world's most active volcanoes. The islands have no snakes and their only native mammal is a small bat, of which there are many species.

Hawaii's Governor is appointed by the President to a 4-year term, and there is a locally elected 2-house legislature. The territory's delegate to the U. S. House of Representatives has floor privileges but no vote. Legislation is pending in Congress for the admission of Hawaii as a state.

Hawaii was discovered in 1778 by Captain James Cook, an Englishman, who named it the Sandwich Islands. It was ruled by native monarchs until 1893, thereafter as a republic until 1898, when it ceded itself to the U. S.

COMMONWEALTH OF PUERTO RICO

Capital: San Juan.

Governor: Luis Muñoz Marín, Pop. Dem. (to Jan. 1961).

Song: "La Borinqueña."

1940 population: 1,869,255.

1950 population: 2,210,703.

1940-50 population change: +18.3%.

1957 estimated population: 2,302,000.

Area: 3,423 sq. mi.

Largest cities (1950 Census): San Juan (357,205*); Ponce (99,492); Mayagüez (58,944); Caguas (33,759); Arecibo (28,659).

* Includes Río Piedras (182,438), which was annexed in 1954.

Puerto Rico is an island about 100 mi. long and 35 mi. wide at the northeastern end of the Caribbean Sea. It is a self-

governing Commonwealth freely and voluntarily associated with the U. S. Under its Constitution, a Governor and a Legislative Assembly are elected by direct vote for a 4-year period. The judiciary is vested in a Supreme Court and lower courts established by law. The people elect a Resident Commissioner to the U. S. House of Representatives, where he has a voice but no vote. The island was formerly an unincorporated territory of the U. S. after being ceded by Spain as a result of the Spanish-American War.

The Commonwealth is one of the most densely populated areas of the world, with about 674 inhabitants per square mile. However, it has one of the highest standards of living in Latin America. Featuring Puerto

Rican economic development is Operation Bootstrap. This program has established some 500 new factories and has greatly increased agricultural production, transportation and communications facilities, electric power, housing, etc. Life expectancy was ex-

panded from 46 to 63 years during 1940-50. School enrollment has been doubled.

Columbus discovered the island on his second voyage to America in 1493. Ponce de León settled it for Spain by 1508, and became its first governor in 1510.

NON SELF-GOVERNING U. S. TERRITORIES

AMERICAN SAMOA

Capital: Pago Pago (on Tutuila Island).

Governor: Peter Tali Coleman.

1940 population: 12,908.

1950 population: 18,937.

1956 population: 20,154.

Area: 75.3 sq. mi.

American Samoa, a group of 5 volcanic islands and 2 coral atolls located some 2,400 miles south of Hawaii in the South Pacific Ocean, is administered by the Interior Dept.

By the Treaty of Berlin signed Dec. 2, 1899, and ratified Feb. 16, 1900, the U. S. was internationally acknowledged to have rights extending over all the islands of the Samoa group east of longitude 171° west of Greenwich. On Apr. 17, 1900, the chiefs of Tutuila and Aunu'u ceded those islands to the U. S. In 1904, the King and chiefs of Manu'a ceded the islands of Ofu, Olosega and Tau (composing the Manu'a group) to the U. S. Swains Island, some 200 miles north of Samoa, was included as part of the territory by Act of Congress Mar. 4, 1925; and on Feb. 20, 1929, Congress formally accepted sovereignty over the entire group and placed the responsibility for administration in the hands of the President. From 1900-51, by Presidential direction, the Department of the Navy governed the territory. On July 1, 1951, administration was transferred to the Department of the Interior.

The principal products are copra, mats, handicrafts and canned fish.

BAKER, HOWLAND AND JARVIS

These Pacific islands were not to play a role in the extraterritorial plans of the U. S. until May 13, 1936, when the U. S. perfected its claim. President F. D. Roosevelt, at that time, placed them under the control of and jurisdiction by the Secretary of the Interior for administration purposes.

Baker Island is a saucer-shaped atoll with an area of approximately one square mile and an elevation of 20 feet. It is about 1,650 miles from Hawaii.

Howland Island, 36 miles to the northeast, is approximately one and a half miles long and half a mile wide and rises to an elevation of 18 feet.

Jarvis Island is several hundred miles to the east and is approximately two miles long by one and an eighth miles wide.

CANAL ZONE

Headquarters: Balboa Heights, C. Z.; 21 West St., New York City; 425 Thirteenth St., N. W., Washington, D. C.

Governor-President: Major Gen. William H. Potter.

1940 population: 51,827.

1954 population: 38,953.

Area: 648.01 sq. mi.

The Canal Zone is a 50-mile strip between the Atlantic and Pacific Oceans which was granted to the U. S. by the Republic of Panamá by treaty in 1903 (ratified Feb. 26, 1904). It extends roughly 5 miles on either side of the center line of the Panama Canal.

The 1903 treaty provided for the payment of \$10,000,000 by the U. S. to Panamá upon ratification of the treaty and \$250,000 in gold annually, beginning 9 years after ratification. The annual payments were increased to \$430,000 after the U. S. went off the gold standard. The annuity was increased to \$1,930,000 by the 1955 treaty.

The history of the Canal goes back to 1534, when King Charles V of Spain ordered a survey made. Construction of the waterway was formally inaugurated in Jan. 1880 by the French Canal Co. under a concession granted by New Granada (Colombia) 2 years earlier. The canal rights and properties of the second French Canal Co. were bought by the U. S. for \$40,000,000, the transfer being made May 4, 1904, in Panama City. The construction was completed 10 years later.

The Canal is 40.27 miles from shore line to shore line and 50.72 miles from deep water in the Caribbean to deep water in the Pacific. The Panama Railroad, completed in 1855, is owned by the Panama Canal Co. It roughly parallels the Canal channel, running 47.64 miles from Colón to Panama City and is the oldest transcontinental railroad in the Americas.

The Panama Canal Locks, which provide a water bridge between the two oceans, are Gatún Locks on the Atlantic side and Pedro Miguel and Miraflores Locks on the Pacific side. They lift or lower ships 85 feet between sea level and Gatún Lake level in 3 steps on each side of the Isthmus. Each of the twin chambers in every flight of locks has a usable length of 1,000 feet, and width of 110 feet, and is about 70 feet deep.

The Canal Zone is, in effect, a government reservation, and in general no private enterprise is permitted except that relating directly to the operation of the waterway. The Governor, who is appointed by the U. S. President, administers the Canal Zone Government, which is charged with the civil government, including health, sanitation and protection of the Zone. The Governor is also ex officio President of the Panama Canal Company, which is a corporate agency of the U. S. charged with the operation of the Canal and related business activities.

CANTON AND ENDERBURY

Canton and Enderbury islands, the largest of the Phoenix group, are jointly owned and supervised by the U. S. and Great Britain after an agreement signed on Apr. 6, 1939. Canton is triangular in shape and the largest of the eight islands of this group. It lies approximately 1,600 miles southwest of Hawaii in the Pacific and was discovered at the turn of the eighteenth century by U. S. whalers. It was surveyed by Commander R. W. Meade who named it after a whaler ship. It had, in 1955, a population of 279, including Europeans. Enderbury is rectangular in shape and is 2.7 miles long by one mile wide. It is unpopulated and lies about 32 miles southeast of Canton.

GUAM

Capital: Agaña.

Governor: Richard Barrett Lowe.

1940 population: 22,290.

1950 population: 59,498.

1957 estimated population: 70,000.

Area: 225 sq. mi.

Guam, the largest of the Mariana Islands, is independent of the trusteeship assigned to the U. S. in 1947. It was acquired by the U. S. from Spain in 1898 (occupied 1899) and was placed under the Navy Department.

In World War II, Guam was seized by the Japanese on Dec. 11, 1941; but on July 27, 1944, it was once more in U. S. hands.

On Aug. 1, 1950, President Truman signed a bill which granted U. S. citizenship to the people of Guam and established self-government. However, the people do not have an elected representative in Washington, D.C., and they do not vote in national elections. The civilian Governor operates under the Department of the Interior.

Guam farmers raise all crops indigenous to a subtropical climate.

Added stimulus to Guam's economy was given by the development in 1950 of a commercial port at Apra Harbor.

JOHNSTON ISLAND

This island was originally discovered by Captain Charles James Johnston of *H.M.S. Cornwallis* on Dec. 14, 1807. On July 27, 1858, it was claimed by Hawaii and became a possession of the U. S. The island is about 600 miles southwest of Hawaii and about 1½ miles long by half a mile wide.

KINGMAN REEF

This reef was discovered by Captain W. E. Kingman in Nov. 1853 and is the smallest land of U. S. sovereignty. It is 150 feet long by 120 feet wide at high tide. At low tide, two other islets of this atoll appear. It is approximately 1,000 miles south of Hawaii.

KURE (OCEAN) ISLAND. See HAWAII

MIDWAY

Midway, lying about 1,200 miles west-northwest of Hawaii, was discovered by Captain N. C. Brooks of the Hawaiian bark

Gambia on July 5, 1859, in the name of the U. S. It was formally declared a U. S. possession in 1867, and in 1903 Theodore Roosevelt made it a naval reservation.

Sand and Eastern Islands, with 850 acres and 328 acres respectively, are its largest individual islands. In 1935 Midway became a stopover for commercial transpacific flights. Commercial activities ceased in 1950.

The total group comprises an area of 28 square miles and has no native population. The Navy Dept. maintains an installation and, with the Civil Aeronautics Administration, has jurisdiction over the island.

PALMYRA. See HAWAII**VIRGIN ISLANDS OF THE U. S.**

Capital: Charlotte Amalie (on St. Thomas).

Governor: Walter A. Gordon.

1940 population: 24,889 (St. Croix, 12,902; St. Thomas, 11,265; St. John, 722).

1950 population: 26,665.

1940-50 population change: +7.1%.

1956 estimated population: 30,261.

Area: 133 sq. mi. (St. Croix, 82; St. Thomas, 32; St. John, 19).

The Virgin Islands, consisting of 9 main islands and some 75 islets, were discovered by Columbus in 1493. Since 1666, England has held 6 of the main islands; the other 3 (St. Croix, St. Thomas and St. John), as well as about 50 of the islets, were eventually acquired by Denmark, which named them the Danish West Indies. In 1917, these islands were purchased by the U. S. from Denmark for \$25 million.

Congress granted U. S. citizenship to Virgin Islanders in 1927; and, in 1931, administration was transferred from the Navy to the Department of the Interior. Universal suffrage was given in 1936 to all persons who could read and write the English language. The Governor is appointed by the President of the U. S.

About 85% of the population is Negro, and there is limited farming, fishing and cattle raising. Vegetables, citrus fruits and coconuts are raised, and the chief items of export are sugar, rum and bay rum. Tourism is the principle industry.

WAKE ISLAND

Wake Island, about halfway between Midway and Guam, is actually the three islets of Wilkes, Peale and Wake. They were discovered by the British in 1796 and annexed by the U. S. in 1898. The entire area comprises four square miles. In 1938, Pan American Airways established a seaplane base and it has been used as a commercial base since then. On Dec. 8, 1941, it was attacked by the Japanese, who finally took possession on Dec. 23. It was surrendered by the Japanese on Sept. 4, 1945. On Oct. 15, 1950, it was the scene of a conference between President Truman and General MacArthur.

The Civil Aeronautics Administration maintains a station on the island and has jurisdiction, with the Navy, over the island. There is no native population.

U. S. Trusteeships

In 1885, Germany assumed a protectorate over the Marshall Islands; and, in 1899, she purchased the Northern Mariana and Caroline Islands from Spain. These islands were occupied by the Japanese in 1914 and were mandated to Japan by the League of Nations in 1919. On Apr. 2, 1947, the U. N. Security Council approved a trusteeship agreement proposed by the U. S. under which the Northern Mariana, Caroline and Marshall Islands became a Strategic Trust Territory under the administration of the U. S. The measure was approved by the President, with the agreement of Congress, on July 18, 1947. Administration was transferred from the Navy to the Department of the Interior on July 1, 1951. However, administration of Saipan and Tinian was transferred back to the Navy on Jan. 1, 1953. On July 17 of the same year, administration of the remaining islands of the Northern Marianas, with the exception of Rota, was also transferred back to the Navy.

The entire group comprises more than 2,000 islands, but the total land area is only 687 sq. mi., many of the islands being only tiny coral reefs. The Micronesians are the main cultural group, the inhabitants of the Northern Marianas being most advanced.

MARIANA ISLANDS

The Mariana Islands, east of the Philippines and south of Japan, include the islands of Guam, Rota, Saipan, Tinian, Pagan, Guguan, Agrihan and Aguijan. Guam, the largest, is independent of the trusteeship, having been acquired by the U. S. from Spain in 1898. (For information on Guam, see page 237.)

Chief crops are copra and fresh fruits and vegetables.

CAROLINE ISLANDS

The Caroline Islands, east of the Philippines and south of the Marianas, include the Yap, Truk and Palau groups and the islands of Ponape and Kusale, as well as many coral atolls.

The islands are composed chiefly of volcanic rock, and their peaks rise 2,000 to 3,000 feet above sea level. Chief exports of the islands are copra, trochus and handicrafts.

MARSHALL ISLANDS

The Marshall Islands, east of the Carolines, are divided into two chains: the western or Ralik group, including the atolls Jaluit, Kwajalein, Wotho, Bikini and Eniwetok; and the eastern or Ratak group, including the atolls Mili, Majuro, Maloelap, Wotje and Likiep.

The islands are of the coral-reef type and rise only a few feet above sea level. The chief crop is coconuts; exports include copra, tortoise shell, mother-of-pearl, etc.

Bikini and Eniwetok have been the scene of several atom-bomb tests.

Islands Under Provisional U. S. Administration

In accordance with the Japanese peace treaty signed Sept. 8, 1951, the U. S. may propose that the U. N. assign to it, as a trusteeship, the following former Japanese territory: the Ryukyu Islands south of 29° n. lat. (largest: Okinawa); the Bonin Islands (largest: Chichi Jima); the Volcano Islands

(including Iwo Jima); Rosario Island; Parece Vela; and Marcus Island. It was also agreed in the treaty that, until such trusteeship is actually granted, the U. S. will administer the islands. As of Sept. 1956, no action had been taken by the U. S. toward bringing about this trusteeship.

THE 50 LARGEST CITIES OF THE CONTINENTAL U. S.

Since we planned the INFORMATION PLEASE ALMANAC as a book of national scope and interest, we avoided emphasis on and identification with a single city or state, as has been characteristic of all almanacs heretofore. To obtain accurate and authoritative information we have gone to the city officials. We appreciate their co-operation.

AKRON, OHIO

Incorporated as city: 1865.
Mayor-Manager: Leo Berg (to Dec. 1957).
1940 population & (rank): 244,791 (38).
1950 population & (rank): 274,605 (39).
1940-50 population change: +12.2%.
1950 land area: 53.7 sq. mi.
Altitude: 1,081 ft.
Location: In NE part of state, on Little Cuyahoga River.
County: Seat of Summit Co.
Churches: 260 of all denominations.
City-owned parks: 73 (4,400 ac.).
Telephones (1956): 124,277.
Television sets (1956): 133,100.*

Radio stations (1955): AM, 4; FM, 1.
Assessed valuation (1956): \$693,000,000.
City tax rate (1956): \$33.73 per \$1,000.
Bonded debt (1956): \$16,324,000.
Revenue (1956): \$19,241,116.
Expenditure (1956): \$19,241,116.

* In viewing area.

ATLANTA, GA.

Incorporated as city: 1847.
Mayor: William B. Hartsfield (to Jan. 1958).
1940 population & (rank): 302,288 (28).
1950 population & (rank): 331,314 (33).
1957 estimated population: 503,000.

1940-50 population change: +9.6%.

1957 area: 126,997 sq. mi.

Altitude: Highest, 1,050 ft.; lowest, 940.

Location: In NW central part of state, near Chattahoochee River.

Counties: In Fulton and De Kalb Cos.; seat of Fulton Co.

Churches: For whites, more than 352; for Negroes, more than 270.

City-owned parks and parkways: 146 (2,350 ac.).

Telephones (1956): 324,455.

Families with radios (1956): 220,400.

Television sets (1956): 186,200.

Radio stations: AM, 11; FM, 5.

Television stations: 3.

Assessed valuation (1956): \$894,623,170.

City tax rate (1956): \$25.50 per \$1,000.

Bonded debt (1956): \$32,215,230.

Revenue (1956): \$26,689,970.*

Expenditure (1956): \$36,921,205.

* Does not include \$2,514,340 brought forward from 1955.

BALTIMORE, MD.

Incorporated as city: 1797.

Mayor: Thomas D'Alesandro, Jr. (to May 1959).

1940 population & (rank): 859,100 (7).

1950 population & (rank): 949,708 (6).

1940-50 population change: +10.5%.

1940 area: Land, 78.7 sq. mi.; inland water, 6.9.

Altitude: Highest, 490 ft.; lowest, sea level.

Location: On Patapsco River, about 12 mi. from Chesapeake Bay.

County: Independent city.

Churches: Roman Catholic, 72; Jewish, 57; Protestant and other, 482 (150 colored).

City-owned parks: 148 park areas and tracts (6,000 ac.).

Telephone subscribers (April 1, 1954): 220,404.

Radio stations: AM, 8; FM, 3.

Television stations: 3.

Assessed valuation (1957): \$3,565,123,268.

City tax rate (1957): \$2.88 per \$100.

Net bonded debt (Jan. 1, 1957): \$256,443,217.

Revenue (1956 budget): \$169,308,132.

Expenditure (1956 budget): \$162,166,133.

BIRMINGHAM, ALA.

Incorporated as city: 1871.

Mayor: James W. Morgan (to Nov. 1957).

1940 population & (rank): 267,583 (35).

1950 population & (rank): 326,027 (34).

1940-50 population change: +21.8%.

1957 estimated population: 366,000.

1955 land area: 66.88 sq. mi.

Altitude: Highest, 1,052 ft.; lowest, 565.

Location: In N central part of state.

County: Seat of Jefferson Co.

Churches: Protestant, 491; Roman Catholic, 26; Jewish, 3.

City-owned parks: 66 (1,211 ac.).

Telephones (1957): 169,951.

Television sets (1955): 142,000.

Radio stations: AM, 11; FM, 3.

Television stations: 3.

Assessed valuation (1956): \$400,000,000.

City tax rate (1955): \$18 per \$1,000.

Net bonded debt (1956): \$20,989,778.

Revenue (1956): \$24,519,347.

Expenditure (1956): \$24,333,762.

BOSTON, MASS.

Incorporated as city: 1822.

Mayor: John B. Hynes (to Jan. 1960).

1940 population & (rank): 770,816 (9).

1950 population & (rank): 801,444 (10).

1940-50 population change: +4.0%.

1956 area: Land, 47.8 sq. mi.; inland water, 19.8.

Altitude: Highest, 330 ft.; lowest, sea level.

Location: On Massachusetts Bay, at mouths of Charles and Mystic Rivers.

County: Seat of Suffolk Co.

Churches: Protestant, 253; Roman Catholic, 84; Jewish, 38; others, 74.

City-owned parks & parkways: 2,747.16 ac.

Telephones: 344,663.

Radio sets (Greater Boston Area): 857,549.

Television sets (Greater Boston Area): 792,309.

Radio stations: AM, 9; FM, 8.

Television stations: 3.

Assessed valuation (1956): \$1,517,808,000.

City tax rate (1956): \$78.70 per \$1,000.

Net bonded debt (1956): \$58,652,208.

Revenue (1956): \$216,971,808.

Expenditure (1956): \$224,266,243.

BUFFALO, N. Y.

Incorporated as city: 1832.

Mayor: Steven Pankow (to Jan. 1958).

1940 population & (rank): 575,901 (14).

1950 population & (rank): 580,132 (15).

1940-50 population change: +0.7%.

1940 area: Land, 42.67 sq. mi.; inland water, 10.8.

Altitude: Highest, 680 ft.; lowest, 571.

Location: At east end of Lake Erie, on Niagara River.

County: Seat of Erie Co.

Churches: Protestant, 290; Roman Catholic, 82; Jewish, 12; others, 34.

City-owned parks: 10 large (1,117 ac.), 41 minor (116 ac.).

Telephones (Feb. 1957): 334,508.

Radio sets: 325,000.

Television sets: 150,000.

Radio stations: AM, 7; FM, 4.

Television stations: 3.

Assessed valuation (1956-57): \$1,052,337,563.

City tax rate (1955-56): \$34.48 per \$1,000.

Bonded debt (June 1956): \$43,957,467.

Revenue (1955-56): \$62,691,025.

Expenditure (1955-56): \$63,658,060.

CHICAGO, ILL.

Incorporated as city: 1837.

Mayor: Richard J. Daley (to Apr. 1959).

1940 population & (rank): 3,396,808 (2).

1950 population & (rank): 3,620,962 (2).

1940-50 population change: +6.6%.

1957 area: Land, 221.397 sq. mi.; inland water, 5.368.

Altitude: Highest, 672 ft.; lowest, 581.

Location: On lower west shore of Lake Michigan.

County: Seat of Cook Co.

Churches: Protestant, 1,119; Roman Catholic, 300; Jewish, 54.

City-owned parks: 210.

Telephones (Mar. 1957): 1,772,887.

Radio sets (June 1, 1954): 2,315,630.

Television sets (1957): 2,518,213.
 Radio stations: AM, 16; FM, 13.
 Television stations: 5.
 Assessed valuation (1956): \$9,433,977,134.
 City tax rate (1956): \$3.732 (north of 87th St.); \$3.754 (south of 87th St.). Both per \$100.
 Gross bonded debt (1957): \$503,867,000.
 Revenue (1956): \$790,738,712.
 Expenditure (1956): \$766,311,795.

CINCINNATI, OHIO

Incorporated as city: 1819.
 Mayor: Charles P. Taft (to Nov. 1957).
 City Manager: C. A. Harrell (apptd. 1954).
 1940 population & (rank): 455,610 (17).
 1950 population & (rank): 503,998 (18).
 1940-50 population change: +10.6%.
 1957 land area: 76.34 sq. mi.
 Altitude: Highest, 960 ft.; lowest, 441.
 Location: In SW corner of state on Ohio River.
 County: Seat of Hamilton Co.
 Churches: 505.
 City-owned parks: 81 (3,814.09 ac.).
 Telephones (1956): 434,826.
 Homes with radios (1954): 293,700.*
 Homes with television (1954): 263,400.*
 Radio stations: AM, 7; FM, 2.
 Television stations: 3.
 Assessed valuation (1956): \$1,450,000,000.
 City tax rate (1957): \$10.60 per \$1,000.
 Bonded debt (1956): \$129,263,970.
 Revenue (1956): \$59,886,878.
 Expenditure (1956): \$44,972,205.

* Data for Hamilton County.

CLEVELAND, OHIO

Incorporated as city: 1836.
 Mayor: Anthony J. Celebrezze (to Nov. 1957).
 1940 population & (rank): 878,336 (6).
 1950 population & (rank): 914,808 (7).
 1940-50 population change: +4.2%.
 1950 area: 73.1 sq. mi.
 Altitude: Highest, 865 ft.; lowest, 573.
 Location: On Lake Erie at mouth of Cuyahoga River.
 County: Seat of Cuyahoga Co.
 Churches: Protestant, 377; Roman Catholic, 118; Jewish, 36; others, 6.
 City-owned parks: 35 (2,420 ac.).
 Telephones (Mar. 1955): 696,772.*
 Radio sets (1955): 1,102,500.†
 Television sets (1955): 1,195,000.†
 Radio stations: AM, 8; FM, 3.
 Television stations: 3.
 Assessed valuation (1957): \$2,650,000,000.
 City tax rate (1956): \$33.60 per \$1,000.
 Bonded debt (1957): \$201,754,000.
 Revenue (1956): \$126,802,451.
 Expenditure (1956): \$101,559,853.

* Metropolitan area. † Greater Cleveland. ‡ In viewing area.

COLUMBUS, OHIO

Incorporated as city: 1834.
 Mayor: M. E. Sensenbrenner (to Jan. 1960).
 1940 population & (rank): 306,087 (26).
 1950 population & (rank): 375,901 (28).
 1940-50 population change: +22.8%.
 1957 estimated population: 456,595.*
 Altitude: Highest, 902 ft.; lowest, 702.

Location: In central part of state, on Scioto River.

County: Seat of Franklin Co.

Churches: Protestant, 467; Roman Catholic, 38; Jewish, 6.

City-owned parks: 114 (2,650.87 ac.).

Telephones (1957): 258,322.

Homes with radios (1957): 192,000.

Television sets (1957): 162,720.*

Radio stations: AM, 5.

Television stations: 3.

Assessed valuation (1956): \$900,000,000.

City tax rate (1956): \$21.40 per \$1,000.

Bonded debt (1956): \$64,050,627.

Revenue (1956): \$30,960,150.

Expenditure (1956): \$21,987,676.

* Metropolitan area.

DALLAS, TEX.

Incorporated as city: 1856.

Mayor: R. L. Thornton (to May 1959).

City Manager: Elgin E. Crull (apptd. 1952).

1940 population & (rank): 294,734 (31).

1950 population & (rank): 434,462 (22).

1940-50 population change: +47.4%.

1957 area: 226.125 sq. mi.

Altitude: Highest, 685 ft.; lowest, 375.

Location: In NE part of state, on Trinity River.

County: Seat of Dallas Co.

Churches: 650.

City-owned parks: 110 (6,600 ac.).

Telephones (1957): 347,338.

Radio sets (1957): 525,000.*

Television sets (1957): 250,000.*

Radio stations: AM, 8; FM, 3.

Television stations: 2

Assessed valuation (1956): \$1,174,086,160.

Net bonded debt (March 1, 1957): \$115,983,276.

Revenue ((1955-56): \$52,417,685.

Expenditure (1955-56): \$52,417,685.

* Estimated.

DAYTON, OHIO

Incorporated as city: 1805.

Mayor: Henry S. Stout (to Jan. 1958).

City Manager: Herbert W. Starick (apptd. July 1953).

1940 population & (rank): 210,718 (40).

1950 population & (rank): 243,872 (44).

1940-50 population change: +15.7%.

1957 land area: 30.9 sq. mi.

Altitude: Highest 981 ft.; lowest, 727.

Location: In SW part of state, on Miami River.

County: Seat of Montgomery Co.

Churches: Protestant, 200; Roman Catholic, 29; Jewish, 3.

City-owned parks: 56 (1,550 ac.).

Telephones (1957): 214,151.

Radio sets (1957): 142,260.*

Television sets (1957): 140,000.

Radio stations (1957): AM, 4; FM, 1.

Television stations (1957): 2.

Assessed valuation (1955): \$648,840,890.

City tax rate (1955): \$10 per \$1,000.†

Bonded debt (1955): \$29,136,500.

Revenue (1955): \$9,612,225 (General Fund).

Expenditure (1955): \$9,238,583 (General Fund).

* Dwellings only; Metropolitan area. † Dayton also has a ½ of 1% City Income Tax on salaries and net profits of business.

DENVER, COLO.

Incorporated as city: 1861.

Mayor: Will F. Nicholson (to July 1959).

1940 population & (rank): 322,412 (24).

1950 population & (rank): 415,786 (24).

1940-50 population change: +29.0%.

1956 area: Land, 73.3 sq. mi.; inland water, 0.8.

Altitude: Highest, 5,470 ft.; lowest, 5,130.

Location: In NE central part of state, on South Platte River.

County: Coextensive with Denver Co.

Churches: Protestant, 322; Roman Catholic, 50; Jewish, 12.

City-owned parks: 65 (1,020 planted ac.).

City-owned mountain parks: 28 (13,447.6 ac.).

Families with telephones (1956): 187,232.

Families with radios (1956): 126,922.

Television sets (1956): 75,577.

Radio stations: AM, 11; FM, 2.

Television stations: 5.

Assessed valuation (1955): \$979,689,230.

City tax rate (1955): \$17.90 per \$1,000.

Bonded debt (1955): \$23,265,000.

Revenue (1955): \$73,471,228.

Expenditure (1955): \$59,968,832.

DETROIT, MICH.

Incorporated as city: 1824.

Mayor: Louis C. Marianl (to Nov. 1957).

1940 population & (rank): 1,623,452 (4).

1950 population & (rank): 1,849,568 (5).

1940-50 population change: +13.9%.

1957 area: Land, 139.6 sq. mi.; inland water, 4.1.

Altitude: Highest, 685 ft.; lowest, 574.

Location: In Southeast part of state, on Detroit River.

County: Seat of Wayne Co.

Churches: * Protestant, 1,462; Catholic, 273; Jewish, 39.

City-owned parks: 355 (5,855 ac.).

Telephones: 1,394,000.*

Radio sets: 1,352,000.*

Television sets: 1,006,000.*

Radio stations: AM, 6; FM, 8.

Television stations: 4.

Assessed valuation (1957): \$5,096,020,510.

City tax rate (1957-58): \$24.54 per \$1,000.†

Net bonded debt (June 30, 1956): \$315,448,664.

Revenue (June 30, 1956): \$424,778,314.

Expenditure (June 30, 1956): \$422,402,304.

* Metropolitan area. † Excludes school system.

FORT WORTH, TEX.

Incorporated as city: 1873.

Mayor: Thomas A. McCann (to April 1959).

City Manager: J. F. Davis (apptd. 1956)

1940 population & (rank): 177,662 (46).

1950 population & (rank): 278,778 (38).

1940-50 population change: +56.9%.

1956 estimated population: 357,360.

1950 land area: 143.075 sq. mi.

Altitude: Highest, 780 ft.; lowest, 520.

Location: In N Central part of state, on Trinity River.

County: Seat of Tarrant Co.

Churches: Protestant, 482; Roman Catholic, 16; Jewish, 2.

City-owned parks: 51 (4,800 ac.).

Telephones (1956): 190,150.

Radio sets (1956): 150,000.

Television sets (1956): 120,000.

Radio stations (1956): AM, 6; FM, 1.

Television stations (1956): 2.

Assessed valuation (1956): \$628,932,730.

City tax rate (1956): \$1.78 per \$100.

Bonded debt (1955-56): \$71,618,000.

Revenue (1955-56): \$21,766,487.

Expenditure (1955-56): \$20,426,398.

HOUSTON, TEX.

Incorporated as city: 1837.

Mayor: Oscar F. Holcombe (to Jan. 1958).

1940 population & (rank): 384,514 (21).

1950 population & (rank): 596,163, (14).

1940-50 population change: +55.0%.

1957 estimated population: 872,000.

1957 land area: 353 sq. mi.

Altitude: Highest, 74 ft; lowest, sea level.

Location: In SE part of state, near Gulf of Mexico.

County: Seat of Harris Co.

Churches: Approximately 1,000.

City-owned parks: 120 (3,800 ac.).

Telephones (1957): 438,152.

Radio sets (1957): 328,320.*

Television sets (1957): 492,500.*

Radio stations (1957): AM, 8; FM, 3.

Television stations (1957): 2.

Assessed valuation (1956): \$1,590,257,180.

City tax rate (1957): \$2 per \$100.

Bonded debt (1957): \$162,603,500.

Revenue (1956): \$42,773,074.

Expenditure (1956): \$40,261,011.

* Metropolitan area.

INDIANAPOLIS, IND.

Incorporated as city: 1874.

Mayor: Phillip L. Bayt (to Dec. 1959).

1940 population & (rank): 386,972 (20).

1950 population & (rank): 427,173 (23).

1940-50 population change: +10.4%.

1957 area: Land, 62.5 sq. mi.; inland water, 0.2.

Altitude: Highest, 816 ft.; lowest, 667.

Location: In central part of state, on West Fork of White River.

County: Seat of Marion County.

Churches: 515.

City-owned parks: 32 (3,519 ac.).

Telephones (April 1957): 311,793.

Radio sets: 180,516 (radio families).

Television sets: 165,800.

Radio stations: AM, 6; FM, 2.

Television stations: 3.

Assessed valuation (1957): \$741,672,550.

City tax rate (1957): \$6.6674 per \$100.

Gross debt (Dec. 31, 1956): \$48,643,050.

Revenue (1956): \$47,557,383.

Expenditure (1956): \$47,049,566.

JACKSONVILLE, FLA.

Incorporated as city: 1832.

Mayor: Haydon Burns (to June 1959).

1940 population & (rank): 173,065 (47).

1950 population & (rank): 204,517 (49).

1940-50 population change: +18.2%.

1950 land area: 30.2 sq. mi.

Altitude: Highest, 25 ft.; lowest, 10 ft.

Location: In NE part of state, on St. Johns River near Atlantic Ocean.

County: Seat of Durval Co.
 Churches: 300.
 City-owned parks: 1,200 ac.
 Telephones (1955): 94,000.
 Radio stations (1955): AM, 7; FM, 2.
 Television stations (1955): 2.
 Assessed valuation (1955): \$350,581,280.
 City tax rate (1955): \$13.70 per \$1,000.
 Bonded debt (1955): \$4,508,000.
 Revenue (1954): \$37,857,205.
 Expenditure (1954): \$37,857,205.

JERSEY CITY, N. J.

Incorporated as city: 1855.
 Mayor: Charles S. Witkowski (to May 1961).
 1940 population & (rank): 301,173 (30).
 1950 population & (rank): 299,017 (37).
 1940-50 population change: -0.7%.
 1940 area: Land, 14.3 sq. mi.; inland water, 7.2.
 Altitude: Highest, 180 ft.; lowest, sea level.
 Location: In NE part of state, on Hudson River and Upper New York Bay.
 County: Seat of Hudson Co.
 Churches: Protestant, 96; Roman Catholic, 39; Jewish, 17; Others, 45.
 Telephones (1957): 83,876.
 Assessed valuation (1957): \$489,069,884.
 City tax rate (1957): \$86.68 per \$1,000.
 Bonded debt (Dec. 31, 1956): \$34,077,500.*
 Revenue (1956): \$52,180,822.
 Expenditure (1956): \$52,010,179.

* Includes bonds and notes authorized and not issued of \$435,000.

KANSAS CITY, MO.

Incorporated as city: 1850.
 Mayor: H. Roe Bartle (to Apr. 1959).
 City Manager: L. P. Cookingham (apptd. June 1940).
 1940 population & (rank): 399,178 (19).
 1950 population & (rank): 456,622 (20).
 1940-50 population change: +14.4%.
 1957 land area: 97.9 sq. mi.
 Altitude: Highest, 1,014 ft.; lowest, 722 ft.
 Location: In western part of state, at conjunction of Missouri and Kansas Rivers.
 County: Located in Jackson & Clay Counties.
 Churches: Protestant, 325; Roman Catholic, 38; Jewish, 7.
 City-owned parks: 52 (2,927 ac.).
 Telephones (1956): 260,123.
 Television sets (1956): 628,532.
 Radio stations (1956): AM, 9; FM, 1.
 Television stations (1956): 3.
 Assessed valuation (1956): \$884,000,000.
 City tax rate (1956-57): \$15 per \$1,000.
 Bonded debt (Apr. 30, 1956): \$52,072,000.
 Revenue (1956): \$26,251,994.
 Expenditure (1956): \$25,897,406.

LONG BEACH, CALIF.

Founded: 1880.
 Mayor: Ray C. Kealer (to July 1960).
 City Manager: Samuel E. Vickers (apptd. 1949).
 1940 population & (rank): 164,271 (53).
 1950 population & (rank): 250,767 (41).
 1940-50 population change: +52.7%.
 1956 population: 305,500.
 1950 land area: 34.7 sq. mi.
 Altitude: Highest, 47 ft.; lowest, sea level.
 Location: On San Pedro Bay, south of Los Angeles.

County: In Los Angeles Co.
 Churches: 175.
 City-owned parks: 36 (1,627.94 ac.).
 Telephones (1956): 151,412.
 Radio stations (1955): AM, 3; FM, 1.
 Television stations: None.
 Assessed valuation (1956-57): \$514,071,915.
 City tax rate (1956-57): \$1.35 per \$100.
 Bonded debt (June 30, 1956): \$15,085,500.
 Revenue (1955-56): \$64,495,618.
 Expenditure (1955-56): \$43,578,718.

LOS ANGELES, CALIF.

Incorporated as city: 1850.
 Mayor: Norris Poulson (to June 1961).
 1940 population & (rank): 1,504,277 (5).
 1950 population & (rank): 1,970,358 (4).
 1940-50 population change: +31.0%.
 1956 population (Special U. S. Census): 2,243,901.
 1957 area: 454.754 sq. mi.
 Altitude: Highest, 5,081 ft.; lowest, sea level.
 Location: In SW part of state, on Pacific Ocean.
 County: Seat of Los Angeles Co.
 Churches: 1,700.
 City-owned parks: 110 (9,604 ac.).
 Telephones (1957): 1,314,755.
 Radio sets (1957): 3,118,662.
 Television sets (1957): 828,122.
 Radio stations (1957): AM, 25; FM, 17.*
 Television stations (1957): 7.
 Assessed valuation (1956-57): \$3,471,164,870.
 City tax rate (1956-57): \$1.9007 per \$100.
 Gross debt (June 30, 1957): General obligation bonds, \$190,441,000; revenue bonds, \$325,660,000.
 Revenue (1955-56): \$453,128,988 (includes income from sale of bonds).
 Expenditure (1955-56): \$391,476,478 (includes capital expenditures).
 * Metropolitan area.

LOUISVILLE, KY.

Incorporated as city: 1828.
 Mayor: Andrew Broaddus (to Dec. 1957).
 1940 population & (rank): 319,077 (25).
 1950 population & (rank): 369,129 (30).
 1940-50 population change: +15.7%.
 1956 land area: 55.2 sq. mi.
 Altitude: Highest, 761 ft.; lowest, 382 ft.
 Location: In north central part of state, on Ohio River.
 County: Seat of Jefferson Co.
 Churches*: Protestant, 474; Roman Catholic, 62; Jewish, 6.
 City-owned parks: 7 (2,048 ac.).
 Telephones (1955)†: 158,477.
 Radio sets (1955): 126,660.
 Television sets (1955)†: 157,920.
 Radio stations (1955): AM, 7; FM, 0.
 Television stations (1955): 2.
 Assessed valuation (Jan. 1, 1955): \$681,580,587.
 City tax rate (1956): \$1.50 per \$100 (city purposes only; exclusive of schools).
 Net bonded debt (Dec. 31, 1956): \$57,532,773.
 Revenue (1956): \$16,299,881 (general corporate purposes only).
 Expenditure (1956): \$16,084,491 (general corporate purposes only).

* Jefferson County. † Metropolitan area.

MEMPHIS, TENN.

Incorporated as city: 1826.

Mayor: Edmund Orgill (to Jan. 1960).

1940 population & (rank): 292,942 (32).

1950 population & (rank): 396,000 (26).

1940-50 population change: +35.2%.

1950 area: Land, 121.1 sq. mi.; inland water, 11.6.

Altitude: Highest, 320 ft.; lowest, 195.

Location: In SW corner of state, on Mississippi River.

County: Seat of Shelby Co.

Churches: Roman Catholic, 18; Jewish, 7;

Protestant & other, 538.

City-owned parks: 48 (1,985 ac.); playgrounds, 45.

Telephones (Apr. 1, 1957): 210,077.

Radio sets (Apr. 1, 1954): 150,126.

Television sets (Apr. 1, 1954): 125,102.

Radio stations: AM, 8; FM, 1.

Television stations: 3.

Assessed valuation (1955): \$688,761,752.

City tax rate (1953): \$1.80 per \$100.

Bonded debt (Dec. 31, 1954): \$42,863,179.

Revenue (1954): \$16,675,922.

Expenditure (1954): \$16,867,636.

MIAMI, FLA.

Incorporated as city: 1896.

Mayor: Randall N. Christmas (to Nov. 1957).

City manager: Gen. E. A. Evans (apptd. Sept. 1, 1952).

1940 population & (rank): 172,172 (48).

1950 population & (rank): 249,276 (42).

1940-50 population change: +44.8%.

1957 estimated population: 320,000.

1957 area: Land, 34.19 sq. mi.; inland water, 18.45.

Altitude: Average, 10 ft.

Location: In SE part of state, on Biscayne Bay.

County: Seat of Dade Co.

Churches: Miami proper, 144; Metropolitan Miami (Dade County), 306.

City-owned parks: 51.

Telephones (1957): 362,130.

Radio sets (1957): 764,000.*

Television sets (1957): 500,000.*

Radio stations: AM, 8; FM, 5.

Television stations: 4.

Assessed valuation (1956): \$689,441,010.

City tax rate (1956): \$24.97 per \$1,000.

Bonded debt (June 30, 1956): \$27,905,894.

Revenue (1955-56): \$22,079,502.

Expenditure (1955-56): \$22,015,325.

* Estimates for Greater Miami.

MILWAUKEE, WIS.

Incorporated as city: 1846.

Mayor: Frank P. Zeldler (to Apr. 1960).

1940 population & (rank): 587,472 (13).

1950 population & (rank): 637,392 (13).

1940-50 population change: +8.5%.

1957 land area: 74.15 sq. mi.

Altitude: 581 ft.

Location: In SE part of state, on Lake Michigan.

County: Seat of Milwaukee Co.

Churches: 473.

County-owned parks: 78 (7,780 ac.).

Telephones (1955): 400,708.

Radio sets (1954): 271,490.*

Television sets (1956): 291,903.

Radio stations: AM, 8; FM, 2.

Television stations: 5.

Assessed valuation (1957): \$1,636,976,083.

City tax rate (1957): \$37.12 per \$1,000.

Gross debt (Dec. 31, 1955): \$52,403,674.

Revenue (1955): \$104,512,118.

Expenditure (1956): \$106,473,420.

* Milwaukee Metropolitan Area.

MINNEAPOLIS, MINN.

Incorporated as city: 1867.

Mayor: P. Kenneth Peterson (to July 1959).

1940 population & (rank): 492,370 (16).

1950 population & (rank): 521,718 (17).

1940-50 population change: +6.0%.

1954 area: Land, 58.79 sq. mi.; inland water, 5.0.

Altitude: Highest, 945 ft.; lowest, 695.

Location: In SE central part of state, on Mississippi River.

County: Seat of Hennepin Co.

Churches: 472.

City-owned parks: 147.

Telephones (1955): 325,000.

Radio sets (1952): 410,000.

Television sets (1955): 180,000.

Radio stations: AM, 10; FM, 3.

Television stations: 5.

Assessed valuation (1953): \$341,000,000.

City tax rate (1953): \$1.48 per \$100.

Net debt (1953): \$41,771,000.

Revenue (1953): \$61,894,689.

Expenditure (1951): \$52,000,000.

NEW ORLEANS, LA.

Incorporated as city: 1805.

Mayor: de Lesseps S. Morrison (to May 1958).

1940 population & (rank): 494,537 (15).

1950 population & (rank): 570,445 (16).

1940-50 population change: +15.3%.

1957 estimated population: 644,900.

1954 area: Land, 199.4 sq. mi.; inland water, 164.1.

Altitude: Highest, 15 ft.; lowest, 4 below sea level.

Location: In SE part of state, between Mississippi River and Lake Pontchartrain.

Parish: Seat of Orleans Parish.

Churches: 625.

City-owned parks: 69 (1,700 ac.).

Telephones (1956): 276,671.

Radio sets (1956): 228,000.

Television sets (1956): 200,000.

Radio stations: AM, 11; FM, 4.

Television stations: 3.

Assessed valuation (1957): \$856,102,955.

City tax rate (1957): \$2.9775 per \$100.

Bonded debt (Jan. 1, 1957): \$80,738,000.

Revenue (1957 operating budget): \$27,983,500.

Expenditure (1957 operating budget): \$27,983,500.

NEW YORK, N. Y.

Chartered as "Greater New York": 1898.

Mayor: Robert F. Wagner (to Dec. 1957).

Borough Presidents: Bronx, James J. Lyons;

Brooklyn, John Cashmore; Manhattan,

Hulan E. Jack; Queens, James A. Lundy;

Richmond, Albert V. Maniscalco.

1940 population & (rank): 7,454,995 (1).

1950 population & (rank): 7,891,957 (1).

1940-50 population change: +5.9%.

1940 area: Land, 299.0 sq. mi.; inland water, 66.4 sq. mi.

Altitude: Highest, 430 ft.; lowest, sea level.

Counties: Consists of 5 counties: Bronx, Kings (Brooklyn), New York (Manhattan), Queens, Richmond (Staten Island).

Location: SE part of state, at mouth of Hudson River.

Churches: Protestant, 1,418; Jewish, 1,330; Roman Catholic, 525.

City-owned parks: 882 (27,144 ac.).

Telephones: 3,819,784.

Families with radios: 2,258,470.

Television sets: 4,290,000.

Radio stations: AM, 14; FM, 12.

Television stations: 6.

Assessed valuation (1956-57): \$21,375,000,000.

City tax rate (1956-57): \$.42 per \$100.

Bonded debt (1956): \$2,773,000,000.

Revenue (1956): \$1,853,795,103.

Expenditure (1956): \$1,853,795,103.

NEWARK, N. J.

Incorporated as city: 1836.

Mayor: Leo P. Carlin (to July 1958).

1940 population & (rank): 429,760 (18).

1950 population & (rank): 438,776 (21).

1940-50 population change: +2.1%.

1955 area: Land, 23.57 sq. mi.; inland water, 3.2.

Altitude: Highest, 273.4 ft.; lowest, sea level.

Location: In NE part of state, on Passaic River and Newark Bay.

County: Seat of Essex Co.

Churches: Protestant, 159; Roman Catholic, 41; Jewish, 32; others, 57.

City-owned parks: 38 (34.24 ac.).

County-governed parks in city: 7 (755.72 ac.).

Telephones (1955): 270,000.

Radio sets: Not available.

Radio stations: AM, 4; FM, 3.

Television stations: 1.

Assessed valuation (1957): \$723,714,039.

City tax rate (1957): \$8.93 per \$100.

Net bonded debt (1956): \$35,184,180.

Revenue (1956): \$77,109,602.

Expenditure (1956): \$70,648,922.

NORFOLK, VA.

Incorporated as city: 1845.

Mayor: W. F. Duckworth (to Aug. 1958).

City Manager: Thomas F. Maxwell (apptd. Feb. 1956).

1940 population & (rank): 144,332 (60).

1950 population & (rank): 213,513 (48).

1940-50 population change: +47.9%.

1955 population: 252,605.

1955 land area: 48.35 sq. mi.

Location: In SE part of state, on Elizabeth River.

County: Independent city.

Churches: 360.

Telephones (1957): 116,343.

Radio stations (1957): AM, 6; FM, 3.

Television stations (1957): 1.

Assessed valuation (1957): \$340,000,000.

City tax rate (1957): \$3 per \$100.

Bonded debt (1957): \$48,885,000.

Revenue (1957 anticipated): \$31,010,638.*

Expenditure (1957 budget): \$32,216,286.

* Does not include cash surplus.

OAKLAND, CALIF.

Incorporated as city: 1854.

Mayor: Clifford E. Rishell (to June 1961).

City Manager: Wayne E. Thompson (appt. Aug. 1954).

1940 population & (rank): 302,163 (29).

1950 population & (rank): 384,575 (27).

1940-50 population change: +27.3%.

1950 land area: 53.0 sq. mi.

Altitude: Highest, 1,700 ft.; lowest, sea level.

Location: In west central part of state, on east side of San Francisco Bay.

County: Seat of Alameda Co.

Churches: Protestant, 149; Roman Catholic, 21; Jewish, 3; others, 46.

City-owned parks: 943.6 ac.

Telephones (1957): 343,395.

Radio sets (est. 1957): 365,000.

Television sets (est. 1957): 237,168.*

Radio stations (1957): AM, 3.

Television stations (1957): 5 (Bay area).

Assessed valuation (1956-57): \$565,909,034.

City tax rate (1956-57): \$.234 per \$100.

Bonded debt (June 30, 1956): \$21,186,000.

Revenue (1955-56): \$36,536,010.

Expenditure (1955-56): \$29,542,814.

* Oakland metropolitan area.

OKLAHOMA CITY, OKLA.

Incorporated as city: 1890.

Mayor: Allen Street (to Apr. 1959).

City Manager: William Gill, Jr.

1940 population & (rank): 204,424 (42).

1950 population & (rank): 243,504 (45).

1940-50 population change: +19.1%.

1956 land area: 68.08 sq. mi.

Altitude: Highest, 1,276 ft.; lowest, 1,070.

Location: In central part of state, on North Canadian River.

County: Seat of Oklahoma Co.

Churches: Protestant, about 280; Roman Catholic, 13; Jewish, 2; others, 5.

City-owned parks: 82 (9.924 ac.).

Telephones (1956): 162,457.

Television sets: Not available.

Radio stations: AM, 8; FM, 1.

Television stations: 3.

Assessed valuation (1955): \$316,082,469.

City tax rate (1950): \$12.782 per \$1,000.

Bonded debt (1950): \$18,918,000.

Revenue (1950): \$8,784,230.64.

Expenditure (1950): \$7,935,758.79.

OMAHA, NEBR.

Incorporated as city: 1857.

Mayor: John Rosenblatt (to May 1961).

1940 population & (rank): 223,844 (39).

1950 population & (rank): 251,117 (40).

1940-50 population change: +12.2%.

1950 land area: 48.90 sq. mi.

Altitude: Highest, 1,270 ft.

Location: In eastern part of state, on Missouri River.

County: Seat of Douglas Co.

Churches: Protestant, 200; Roman Catholic, 37; Jewish, 3.

City-owned parks: 3,100 ac.

Telephones (1957): 152,044.

Radio sets: Not available.

Television sets: Not available.

Radio stations (1957): AM, 6; FM, 0.

Television stations (1957): 3.
 Assessed valuation (1957): \$460,000,000.
 City tax rate (1957): 17.90 per \$1,000.
 Bonded debt (1957): \$13,603,500.
 Revenue (1956): \$20,156,079.
 Expenditure (1956): \$16,113,095.

PHILADELPHIA, PA.

First charter as city: 1701.
 Mayor: Richardson Dilworth (to Jan. 1960).
 1940 population & (rank): 1,931,334 (3).
 1950 population & (rank): 2,071,605 (3).
 1940-50 population change: +7.3%.
 1940 area: Land, 127.2 sq. mi.; inland water, 7.8.
 Altitude: Highest, 440 ft.; lowest, sea level.
 Location: In SE part of state, at junction of Schuylkill and Delaware Rivers.
 County: Seat of Philadelphia Co.
 Churches: Roman Catholic, 148; Jewish, 136; Protestant and other, 923.
 City-owned parks: 35 (7,499.19 ac.).
 Telephones (1953): 862,897.
 Television sets (1953): 632,153.
 Radio stations: AM, 10; FM, 7.
 Television stations: 3.
 Assessed valuation (1957): \$3,816,408,660.
 City tax rate (1957): \$3.385 per \$100.
 Net Bonded debt (Jan. 1, 1957): \$394,854,458.
 Revenue (1956): \$202,258,838.
 Expenditure (1956): \$202,993,093.

PITTSBURGH, PA.

Incorporated as city: 1816.
 Mayor: David L. Lawrence (to Jan. 1958).
 1940 population & (rank): 671,659 (10).
 1950 population & (rank): 676,806 (12).
 1940-50 population change: +0.8%.
 1951 area: Land, 55.23 sq. mi.; inland water, 3.0.
 Altitude: Highest, 1,240 ft.; lowest, 715.
 Location: In SW part of state, at junction of Allegheny and Monongahela Rivers to form Ohio River.
 County: Seat of Allegheny Co.
 Churches: Protestant, 1,008; Roman Catholic, 82; Jewish, 11.
 City-owned parks: 23; 9 parklets (1,970 ac.).
 Telephones (1956): 496,892.
 Radio sets (1956): 451,750.*
 Television sets (1956): 393,381.*
 Radio stations (1956): AM, 9; FM, 1.
 Television stations (1956): 4.
 Assessed valuation (1957): Land, \$407,382,041; buildings, \$723,109,910.
 City tax rate (1957): Land, \$33 per \$1,000; buildings, \$16.50 per \$1,000.
 Bonded debt (1956): \$45,634,600.
 Revenue (1956): \$50,390,391.
 Expenditure (1956): \$49,324,728.

* Allegheny County.

PORTLAND, OREG.

Incorporated as city: 1851.
 Mayor: Terry D. Schrunk (to Jan. 1961).
 1940 population & (rank): 305,394 (27).
 1950 population & (rank): 373,628 (29).
 Population change since 1950: +10.3%.
 1957 population: 412,100.
 1957 land area: 70.8 sq. mi.
 Altitude: Highest, 1,073 ft.; lowest, sea level.
 Location: In NW part of state, on Willamette River.

County: Seat of Multnomah Co.
 Churches: Protestant, 475; Roman Catholic, 35; Jewish, 10; Buddhist, 2.
 City-owned parks: 111 (5,550 ac.).
 Telephones (1957): 247,987.
 Radio stations: AM, 8; FM, 5.
 Television stations: 3.
 Assessed valuation (1955-56): \$683,999,825.
 City tax rate (1955-56): \$19.50 per \$1,000.
 Bonded debt (June 30, 1956): \$32,800,705.
 Revenue (1955-56): \$27,203,054.
 Expenditure (1955-56): \$26,681,301.

PROVIDENCE, R. I.

Incorporated as city: 1832.
 Mayor: Walter H. Reynolds (to Jan. 1959).
 1940 population & (rank): 253,504 (37).
 1950 population & (rank): 248,674 (43).
 1940-50 population change: -1.9%.
 1940 land area: 17.9 sq. mi.
 Altitude: Highest, 253 ft.; lowest, sea level.
 Location: In northern part of state, at head of Providence River (north arm of Narragansett Bay).
 County: Seat of Providence Co.
 Churches: Protestant, 107; Roman Catholic, 31.
 City-owned parks: 33 (815 ac.).
 Radio stations: AM, 6; FM, 4.
 Television stations: 2.
 City tax rate (1957): \$33 per \$1,000.
 Net bonded debt (Sept. 30, 1956): \$37,137,624.
 Revenue (1955-56 est. budget): \$31,866,299.
 Expenditure (1955-56 est. budget): \$31,832,600.

RICHMOND, VA.

Incorporated as city: 1782.
 Mayor: F. Henry Garber (to June 1958).
 City Manager: Horace H. Edwards (Apptd. 1954).
 1940 population & (rank): 193,042 (45).
 1950 population & (rank): 230,310 (46).
 1940-50 population change: +19.3%.
 1951 area: 39.89 sq. mi.
 Altitude: Highest, 312 ft.; lowest, 0.
 Location: In east central part of state, on James River.
 County: Administratively independent.
 Churches: 315.
 City-owned parks*: 75.
 Radio stations: AM, 6; FM, 4.
 Television stations: 2.
 Assessed valuation (1956): \$833,495,774.
 City tax rate (1956): Real, \$1.88 per \$100; personal, \$2.20 per \$100; machinery, \$1 per \$100.
 Net bonded debt (June 30, 1956): \$41,596,774.
 Revenue (1955-56): \$32,692,961.
 Expenditure (1955-56): \$32,427,692.

* Including 34 playgrounds and 23 athletic fields.

ROCHESTER, N. Y.

Incorporated as city: 1834.
 Mayor: Peter Barry (Dec. 1957).
 City Manager: Robert P. Aex (apptd. 1954).
 1940 population & (rank): 324,975 (23).
 1950 population & (rank): 332,488 (32).
 1940-50 population change: +2.3%.
 1953 area: Land, 34.8 sq. mi.; inland water, 0.5.
 Altitude: Highest, 655 ft.; lowest, 246 ft.
 Location: In west part of state, on Genesee River.

County: Seat of Monroe Co.
 Churches: Protestant, 128; Roman Catholic, 38; Jewish, 19; others, 22.
 City-owned parks: 23 (2,000 ac.).
 Telephones (1953): 185,000.
 Radio sets (1953): 335,000.
 Television sets (1953): 210,000.
 Radio stations: AM, 6; FM, 2.
 Television stations: 2.
 Assessed valuation (1957): \$659,922,168.*
 City tax rate (1957-58): \$36.52 per \$1,000.
 Bonded debt (Dec. 31, 1956): \$18,607,000.
 Revenue (1957): \$47,520,638.
 Expenditure (1956): \$46,640,715.

* Covering interim period 6 mos. ended 6-30-57.

ST. LOUIS, MO.

Incorporated as city: 1822.
 Mayor: Raymond R. Tucker (to Apr. 1961).
 1940 population & (rank): 816,048 (8).
 1950 population & (rank): 856,796 (8).
 1940-50 population change: +5.0%.
 1953 area: Land, 61.0 sq. mi.; inland water, 4.0.
 Altitude: Highest, 605 ft.; lowest, 410 ft.
 Location: On Mississippi River, 20 miles south of its conjunction with the Missouri River.
 County: Independent city, not in county.
 Churches: 1,043.
 City-owned parks: 79 (2,846.61 ac.).
 Telephones (1955): 619,000.
 Radio sets (1954): 594,300.
 Television sets (1953): 441,360.
 Radio stations (1953): AM, 10; FM, 1.
 Television stations (1953): 4.
 Assessed valuation (1954): \$1,420,074,000.
 City tax rate (1956): \$3.18 per \$100.
 Bonded debt (1955): \$30,000,000.
 Revenue (1954): \$63,619,656.
 Expenditure (1954): \$61,530,292.

ST. PAUL, MINN.

Chartered as city: 1853.
 Mayor: Joseph E. Dillon (to June 1958).
 1940 population & (rank): 287,736 (33).
 1950 population & (rank): 311,349 (35).
 1940-50 population change: +8.2%.
 1955 land area: 55.44 sq. mi.
 Altitude: Highest, 1,045 ft.; lowest, 683.
 Location: In SE central part of state, on Mississippi River.
 County: Seat of Ramsey Co.
 Churches: Protestant, 250; Catholic, 54; Jewish, 4.
 City-owned parks: 5 (2,300 ac.).
 Telephones (1954): 182,000.
 Radio stations: 4.
 Television stations: 3.
 Assessed valuation (1953): \$206,000,000.
 City tax rate (1956): \$94.39 per \$1,000.
 Bonded debt (1954): Gross, \$29,216,000; net, \$16,981,058.
 Revenue (1954): \$55,386,270.
 Expenditure (1954): \$54,916,377.

SAN ANTONIO, TEX.

Incorporated as city: 1809.
 Mayor: J. Edwin Kuykendall (to May 1959).
 City Manager: Stephen J. Matthews (apptd. July 1955).
 1940 population & (rank): 253,854 (36).
 1950 population & (rank): 408,442 (25).

1940-50 population change: +60.9%.
 1957 land area: 154.08 sq. mi.
 Altitude: 728 ft.
 Location: In south central part of state, on San Antonio River.
 County: Seat of Bexar Co.
 City-owned parks: Over 2,000 ac.
 Radio stations (1957): AM, 9; FM, 4.
 Television stations (1957): 4.
 Assessed valuation (1956): \$719,760,180.
 City tax rate (1956): \$1.96 per \$100.
 Bonded debt (1956): \$25,746,000.
 Revenue (1956): \$19,390,875.
 Expenditure (1956): \$17,441,638.

SAN DIEGO, CALIF.

Incorporated as city: 1850; again in 1872.
 Mayor: Charles C. Dall (to May 1959).
 City Manager: O. W. Campbell (apptd. Jan. 1950).
 1940 population & (rank): 203,341 (43).
 1950 population & (rank): 334,387 (31).
 1940-50 population change: +64.4%.
 1957 est. population: 500,000.
 1950 land area: 99.4 sq. mi.
 Altitude: Highest, 822 ft.; lowest, sea level.
 Location: In south part of state, on San Diego Bay.
 County: Seat of San Diego.
 Churches: Roman Catholic, 25; Jewish, 3; Protestant & other, 159.
 City-owned parks: 63 (2,507.11 ac.).
 Telephones: 176,950.
 Radio sets: 300,000.
 Television sets: 160,000.
 Radio stations: AM, 9; FM, 2.
 Television stations: 2.
 Assessed valuation (1956-57): \$588,730,000.
 City tax rate (1956-57): \$1.63 per \$100.
 Bonded debt (1956-57): \$36,495,750.
 Revenue (1955-56): \$28,273,232.
 Expenditure (1956-57): \$37,442,085.

SAN FRANCISCO, CALIF.

Incorporated as city: 1850.
 Mayor: George Christopher (to Jan. 1960).
 1940 population & (rank): 634,536 (12).
 1950 population & (rank): 775,357 (11).
 1940-50 population change: +22.2%.
 1957 est. population: 810,000.
 1950 area: Land, 44.6 sq. mi.; inland water, 48.5.
 Altitude: Highest, 900 ft.; lowest, sea level.
 Location: Between Pacific Ocean and San Francisco Bay.
 County: Coextensive with San Francisco Co.
 Churches (1956): 433.
 City-owned parks & squares (1957): 52; playgrounds, 77; public camps (1956), 2.
 Telephones (1957): 510,488 (including Presidio).
 Homes with radios (1956): 269,100.
 Homes with television (1956): 248,910.
 Radio stations (1957): AM, 9; FM, 5.
 Assessed valuation (1956-57): Land, \$372,008,300; improvements, \$683,537,360; tangible personal property, \$310,628,929.
 Assessed valuation of solvent credits (1956-57): \$859,860,944.
 City tax rate (1956-57): \$7.06 per \$100.
 Bonded debt (July 1, 1956): General city bonds, \$90,913,000; public service enterprise bonds, \$83,366,000.

General city revenue (1955-56): \$154,807,773.
General city expenditure (1955-56): \$150,567,165.

SEATTLE, WASH.

Incorporated as city: 1869.
Mayor: Gordon S. Clinton (to June 1960).
1940 population & (rank): 368,302 (22).
1950 population & (rank): 467,591 (19).
1956 est. population: 561,000.
1940-50 population change: +27.0%.
1954 area: Land, 88.19 sq. mi.; inland water, 12.2.
Altitude: Highest, 540 ft.; lowest, sea level.
Location: In west central part of state, on Puget Sound.
County: Seat of King Co.
Churches: Protestant, 267; Roman Catholic, 30; Jewish, 6.
City-owned parks: 183 (3,136 ac.).
Telephones (1955): 304,120.
Homes with radios (1955): 252,080.
Television sets (1955): 422,220.
Radio stations: AM, 12; FM, 3.
Television stations: 3.
Assessed valuation (1956): \$637,373,841.
City tax rate (1956): \$53.90 per \$1,000.
Bonded debt (Dec. 31, 1956): \$15,245,000.
Revenue (1956): \$35,063,806.
Expenditure (1956): \$31,878,961.

SYRACUSE, N. Y.

Incorporated as city: 1848.
Mayor: Donald H. Mead (to Dec. 1957).
1940 population & (rank): 205,967 (41).
1950 population & (rank): 220,583 (47).
1940-50 population change: +7.1%.
1950 land area: 25.77 sq. mi.
Altitude: Highest, 840 ft.; lowest, 363.
Location: Central part of state, near Oneida Lake.
County: Seat of Onondaga Co.
Churches: Protestant, 76; Roman Catholic, 32; Jewish, 8; others, 8.
City-owned parks: 173 (2,152.37 ac.).
Telephones in Syracuse metropolitan area: 153,-363.
Radio sets, est. (1954): 195,000.
Radio stations: AM, 5; FM, 2.
Television stations: 2.
Assessed valuation (1956): Real estate, \$372,-811,212; special franchise, \$18,981,228.
City tax rate (1957): \$16.372 per \$1,000.
School tax rate (1957): \$19.522 per \$1,000.
Bonded debt (Jan. 1, 1957): \$2,213,000 (includes \$2,195,000 self-liquidating water bonds).
Revenue (1956): \$27,648,570.
Expenditure (1956): \$25,845,872.

TOLEDO, OHIO

Incorporated as city: 1837.
Mayor: Ollie Czelusta (to Dec. 1957).
City Manager: John J. McCarthy (apptd. June 1954).
1940 population & (rank): 282,340 (34).
1950 population & (rank): 303,616 (36).
1940-50 population change: +7.5%.
1950 land area: 38.3 sq. mi.
Altitude: 587 ft.
Location: In NW part of state, on Maumee River at Lake Erie.
County: Seat of Lucas Co.
Churches: Protestant, 258; Roman Catholic, 37; Jewish, 5.
City-owned parks & playgrounds: 52 (2,197 ac.).
Telephones (1954): 171,332.
Radio sets (1954): 95,420.
Television sets (1954): 107,100.
Radio stations: AM, 4; FM, 3.
Television stations: 1.
Assessed valuation (1954): \$760,082,338.
City tax rate (1956): \$22.74 per \$1,000.
Bonded debt: All offset by trust fund.
Revenue (1955): \$29,206,858.
Expenditure (1955): \$25,035,180.

WASHINGTON, D. C.

See District of Columbia, p. 217.

WORCESTER, MASS.

Incorporated as town: 1722.
Incorporated as city: 1848.
Mayor: James D. O'Brien (to Jan. 1958).
City Manager: Francis J. McGrath (apptd. Apr. 1951).
1940 population & (rank): 193,694 (44).
1950 population & (rank): 203,486 (50).
1940-50 population change: +5.1%.
1955 population: 202,612.
1950 land area: 37.0 sq. mi.
Altitude: Highest, 1,051 ft.; lowest, 359 ft.
Location: In central part of state.
County: Seat of Worcester Co.
Churches: Protestant, 85; Roman Catholic, 30; Jewish, 10.
City-owned parks: 52 (1,319 ac.).
Telephones (1955): 82,782.
Radio sets (1955): 137,453.
Television sets (1955): 54,981.
Radio stations (1955): AM, 4; FM, 1.
Television stations (1955): 1.
Assessed valuation (1957): \$341,000,000.
City tax rate (1956): \$62 per \$1,000.
Bonded debt (May 1, 1957): \$26,371,000.
Revenue (1956): \$41,006,912.
Expenditure (1956): \$41,006,912.

Projected Population by 1970 for Leading States*

Source: U. S. Bureau of the Census

	1955	Rank	1960	Rank	1970	Rank
New York	16,021,000	1	18,628,000	1	20,023,000	2
California	12,961,000	2	17,661,000	2	20,296,000	1
Pennsylvania	10,898,000	3	11,917,000	3	12,508,000	3
Illinois	9,301,000	4	10,613,000	5	11,353,000	5
Ohio	8,945,000	5	11,109,000	4	12,258,000	4
Texas	8,748,000	6	10,697,000	6	11,752,000	6
Michigan	7,326,000	7	9,380,000	7	10,483,000	7

* U. S. Armed Forces overseas are excluded.

Tabulated Data on State Governments

Source: Questionnaires to the states.

State	GOVERNOR		LEGISLATURE ¹						HIGHEST COURT ²		
	Term	Annual salary	Membership		Term		Salaries of members ⁵		Members	Term	Annual salary
			U ³	L ⁴	U ³	L ⁴					
Alabama.....	4 ⁶	\$12,000	35	106	4	4	\$ 10 per diem ³⁸		7	6	\$12,000
Arizona.....	2	18,500	28	80	2	2	8 per diem ¹⁹		5	6	15,000
Arkansas.....	2	10,000	35	100	4	2	1,200 per biennium		7	8	15,000
California.....	4	40,000	40	80	4	2	6,000 per annum		7	12	23,000 ²⁶
Colorado.....	2	17,500	35	65	4	2	100 per month		7	10	12,000
Connecticut.....	4	15,000	36	279	2	2	600 per term		5	8	19,000 ¹⁹
Delaware.....	4	17,500	17	35	4	2	1,077 per annum		3	12	17,000 ²⁷
Florida.....	4 ⁶	15,000	38	95	4	2	1,200 per annum ³⁰		7	6	13,500
Georgia.....	4 ⁶	12,000 ²⁶	54	205	2	2	10 per diem ³³		7	6	18,000
Idaho.....	4 ⁶	10,000	44	59	2	2	10 per diem		5	6	8,500
Illinois.....	4	25,000	58	177	4	2	10,000 per biennium		7	9	20,000
Indiana.....	4 ⁶	15,000	50	100	4	2	1,800 per annum		5	6	15,000
Iowa.....	2	12,000	50	108	4	2	2,000 per session		9	6	10,000
Kansas.....	2	15,000	40	125	4	2	5 per diem		7	6	12,000 ³²
Kentucky.....	4 ⁶	15,000	38	100	4	2	25 per diem		7	8	12,000
Louisiana.....	4 ⁶	18,000	39	101	4	4	50 per diem ⁴⁰		7	14	18,000
Maine.....	2	10,000	33	151	2	2	1,250 per session		6	7	11,000 ²⁹
Maryland.....	4 ⁶	15,000	29	123	4	4	1,800 per annum ⁴¹		5	15	21,000 ¹⁶
Massachusetts.....	2	20,000	40	240	2	2	4,500 per annum		7	Life	22,000 ³⁸
Michigan.....	2	22,500	34	110	2	2	4,000 per annum		8	8	18,500
Minnesota.....	2	19,000	67	131	4	2	4,800 per session ³⁴		7	6	19,000 ³⁰
Mississippi.....	4 ⁶	15,000	49	140	4	4	3,000 per session		9	8	12,500 ³⁷
Missouri.....	4 ⁶	25,000	34	157	4	2	1,500 per annum		7	12	17,500
Montana.....	4	12,500	56	94	4	2	20 per diem		5	6	11,000
Nebraska.....	2	11,000	43 ¹¹		2 ¹¹		872 per annum		7	6	12,000
Nevada.....	4	15,000	17	47	4	2	15 per diem		3	6	16,500
New Hampshire.....	2	12,000	24	(19)	2	2	200 per biennium		5	(14)	15,000
New Jersey.....	4 ⁶	30,000	21	60	4	2	5,000 per annum ⁴²		7	(34)	24,000 ¹²
New Mexico.....	2 ⁸	17,500	32	66	4	2	20 per diem		5	8	15,000
New York.....	4	50,000	58	150	2	2	7,500 per annum		7	14	32,500
North Carolina.....	4 ⁶	15,000	50	120	2	2	15 per diem ³¹		7	8	16,000
North Dakota.....	2	9,000	49	113	4	2	5 per diem		5	10	10,000
Ohio.....	2	25,000	33	136	2	2	5,000 per annum		7	6	16,000
Oklahoma.....	4 ⁶	15,000	44	(16)	4	2	15 per diem ¹⁷		9	6	12,500
Oregon.....	4 ⁶	17,500 ¹³	30	60	4	2	600 per annum		7	6	16,000
Pennsylvania.....	4 ⁶	25,000	50	208	4	2	6,000 per session		7	21	25,000 ⁹
Rhode Island.....	2	15,000	44	100	2	2	5 per diem ¹⁸		5	(20)	17,000 ¹⁸
South Carolina.....	4 ⁶	15,000	46	124	4	2	1,000 per session		5	10	12,500 ³⁷
South Dakota.....	2 ⁸	13,000	35	75	2	2	1,050 per biennium		5	6	11,000
Tennessee.....	4 ⁶	12,000	33	99	2	2	10 per diem ²²		5	8	12,000 ³⁶
Texas.....	2	25,000	31	150	4	2	25 per diem ²⁴		(21)	6	20,000
Utah.....	4	12,000	25	64	4	2	500 per annum ⁷		5	10	12,000
Vermont.....	2	11,500	30	246	2	2	70 per week		5	2	10,000 ³¹
Virginia.....	4 ⁶	17,500	40	100	4	2	1,080 per session		7	12	15,500 ³⁰
Washington.....	4	15,000	46	99	4	2	1,200 per annum		9	6	20,000
West Virginia.....	4 ⁶	17,500	32	100	4	2	1,500 per annum		5	12	17,500
Wisconsin.....	2	18,000	33	100	4	2	200 per month		7	10	14,000 ²⁸
Wyoming.....	4	15,000	27	56	4	2	12 per diem		3	8	13,000

¹ Known as General Assembly in Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia; Legislative Assembly in Montana, North Dakota, Oregon; General Court in Massachusetts, New Hampshire; Legislature in other states. Meets annually in Arizona, California, Maryland, Massachusetts, Michigan, New Jersey, New York, Rhode Island, South Carolina; biennially in other states. ² Known as Supreme Judicial Court in Maine, Massachusetts; Supreme Court of Appeals in Virginia, West Virginia; in other states. ³ Upper house; known as Senate in all states. ⁴ Lower house; known as Assembly in California, Nevada, New York, Wisconsin; House of Delegates in Maryland, Virginia, West Virginia; House of Representatives in other states. ⁵ Does not include additional payment for expenses, mileage, etc. ⁶ Cannot succeed himself. ⁷ Plus \$5 per diem during sessions. ⁸ May not serve a third consecutive term. ⁹ Chief Justice, \$25,500. ¹⁰ Chief Justice, \$20,000. ¹¹ Unicameral legislature. ¹² Chief Justice, \$25,000. ¹³ Varies from 350 to 400. ¹⁴ Until 70 years old. ¹⁵ Chief Justice, \$18,000. ¹⁶ Varies from 119 to 123. ¹⁷ During session, to \$1,125; \$100 per month otherwise. ¹⁸ In civil cases; 3 members in Court of Criminal Appeals. ¹⁹ For 75 days only; plus \$5 per diem expenses. ²⁰ For first 120 days only. ²¹ House; Senate \$9,600. ²² Chief Justice, \$24,000. ²³ Governor declined raise offered by 1953 Legislature. ²⁴ Chief Justice, \$500 extra. ²⁵ Chief Justice, \$12,000. ²⁶ For terms beginning after July 8, 1955; \$12,000 for terms beginning earlier. ²⁷ Chief Justice, \$13,000. ²⁸ Chief Justice, \$10,500. ²⁹ During good behavior; retired at 70. ³⁰ After Sept. 1958; Chief Justice, \$16,500; Associate Justices, \$15,000. ³¹ Chief Justice, \$23,000. ³² Chief Justice, \$13,500. ³³ Plus \$20 per diem expenses. ³⁴ Plus \$15 per diem when in session. ³⁵ Plus \$150 monthly allowance when not in session. ³⁶ President of Senate and Speaker of House of Delegates, \$2,050. ³⁷ President of Senate and Speaker of Assembly receive additional one third of regular salary. ³⁸ Plus \$400 per month expenses.

Tabulated Data on City Governments

Source: Questionnaires to the cities.

City	MAYOR		City manager's salary ^{1,2}	COUNCIL OR COMMISSION			
	Term, years	Salary ¹		Name	Members	Term, years	Salary ¹
Akron, Ohio.....	2	\$16,000	.....	Council	13	2	\$3,900
Atlanta, Ga.....	4	20,000	.....	Bd. of Aldermen	17	4	300 ¹⁷
Baltimore, Md.....	4	25,000	.....	Council	21	4	6,500 ²⁸
Birmingham, Ala.....	4	10,000	.....	Commission	3	4	9,000
Boston, Mass.....	4	20,000	.....	Council	9	2	5,000
Buffalo, N. Y.....	4	20,000	.....	Council	15	24	6,000 ²⁰
Chicago, Ill.....	4	25,000	.....	Council	50	4	5,000 ¹⁴
Cincinnati, Ohio.....	2	10,608	\$30,000	Council	9	2	8,000
Cleveland, Ohio.....	2	25,000	.....	Council	33	2	5,000
Columbus, Ohio.....	4	11,500	.....	Council	7	4	1,000
Dallas, Tex.....	2	20 ⁸	22,500	Council	9	2	20 ⁸
Dayton, Ohio.....	4	1,800	25,000	Commission	5	4	1,200
Denver, Colo.....	4	14,000	.....	Council	9	4	3,000 ¹⁰
Detroit, Mich.....	4	25,000	.....	Council	9	4	12,000
Ft. Worth, Tex.....	2	10 ²³	19,200	Council	9	2	10 ²²
Houston, Tex.....	2	20,000	.....	Council	8	2	300 ⁷
Indianapolis, Ind.....	4	13,200	.....	Council	9	4	1,200 ¹⁶
Jacksonville, Fla.....	4	9,600	.....	(²³)	(²²)	4	(²³)
Jersey City, N. J.....	4	12,000	.....	Commission	5	4	11,250
Kansas City, Mo.....	4	15,000	27,500	Council	8	4	4,800
Long Beach, Calif.....	3	250 ³	22,500	Council	9	3	200 ³
Los Angeles, Calif.....	4	25,000	.....	Council	15	4	12,000
Louisville, Ky.....	4	12,000	.....	Bd. of Aldermen	12	2	2,400
Memphis, Tenn.....	4	17,500	.....	Commission	5	4	7,200 ²¹
Miami, Fla.....	2	5,000	25,000	Commission	5	4	5,000
Milwaukee, Wis.....	4	20,000	.....	Council	20	4	7,500
Minneapolis, Minn.....	2	11,250	.....	Council	13	2	7,000
New Orleans, La.....	4	17,500	.....	Council	7	4	7,500
New York, N. Y.....	4	40,000	.....	Council	25	4	7,000
Newark, N. J.....	4	25,000	.....	Council	9	4	6,000 ¹⁸
Norfolk, Va.....	4	3,600	25,000	Council	7	4	2,400
Oakland, Calif.....	4	7,500	25,000	Council	9	4	120 ³
Oklahoma City, Okla.....	4	1,000	25,000	Council	8	4	10 ⁵
Omaha, Nebr.....	4	17,500	.....	Council	7	4	3,000
Philadelphia, Pa.....	4	25,000	.....	Council	17	4	12,000 ⁹
Pittsburgh, Pa.....	4	20,000	.....	Council	9	4	10,000
Portland, Oreg.....	4	12,880	.....	Commission	4	4	11,080
Providence, R. I.....	2	15,000	.....	Council	26	2	1,500 ²⁶
Richmond, Va.....	2	1,800	23,000	Council	9 ¹²	2	1,200
Rochester, N. Y.....	2	1,000	20,100	Council	9	4	2,000
St. Louis, Mo.....	4	10,000	.....	Bd. of Aldermen	29	4	3,000 ¹¹
St. Paul, Minn.....	2	9,000	.....	Council	7 ¹²	2	8,000
San Antonio, Tex.....	2	3,000 ¹⁵	25,000	Council	9	2	1,040
San Diego, Calif.....	4	12,000	25,020	Council	6	4	5,000
San Francisco, Calif.....	4	25,200	24,000 ²⁷	Bd. of Supervisors	11	4	4,800
Seattle, Wash.....	4	15,000	.....	Council	9	4	7,200
Syracuse, N. Y.....	4	20,000	.....	Council	10	2 ¹⁸	3,000 ¹⁹
Toledo, Ohio.....	2	7,000	17,920	Council	9 ²⁴	2	3,600
Worcester, Mass.....	2	5,000	20,000	Council	9	2	4,000

¹ Annual, unless otherwise indicated. ² City Manager's term is indefinite and at will of Council. ³ Per month. For 9 District Councilmen; 4 years for 5 Councilmen-at-large. ⁴ Per Council meeting. ⁵ For 3 members; 2 years for 2 members. ⁶ Per month part-time. ⁷ Per council meeting; not over \$1,040 per year. ⁸ President receives \$15,000. ⁹ President receives \$4,000. ¹⁰ President receives \$5,000. ¹¹ Including mayor. ¹² Also \$1,000 in lieu of secretarial expenses; president receives \$6,500. ¹³ Chairman of Finance Committee receives \$3,500 additional. ¹⁴ Plus Council pay. ¹⁵ President and Chairman of Finance Comm. receive \$1,800. ¹⁶ Per month; President receives \$350. ¹⁷ For 5 District Councilmen; 4 years for 4 Councilmen-at-large and President. ¹⁸ President receives \$4,000. ¹⁹ President receives \$12,000. ²⁰ Vice-Mayor, who is Commissioner of Fire and Police, has salary of \$8,400. ²¹ Per week and per Council meeting. ²² City has both Council and Commission; Council: members, 9; salary, \$1,500. Commission: members, 5; salary, \$6,000. ²³ Including Mayor and Vice-Mayor; latter receives \$4,800. ²⁴ President receives \$12,000. ²⁵ President receives \$2,000. ²⁶ Chief Administrative Officer; appointed by Mayor, for life.

UNITED STATES STATISTICS

POPULATION

Population of the Continental U. S.

Source: U. S. Bureau of the Census.

Colonial estimates		National censuses				Projections	
Year	Population	Year	Population	Land area, sq. mi.	Pop. per sq. mi.	Year	Population
NOTE A							
1610.....	210	1790.....	3,929,214	867,980	4.5	1960.....	179,358,000
1620.....	2,499	1800.....	5,308,483	867,980	6.1	1965.....	193,346,000
1630.....	5,700	1810.....	7,239,881	1,685,865	4.3	1970.....	209,380,000
1640.....	27,947	1820.....	9,638,453	1,753,588	5.5	1975.....	228,463,000
NOTE B							
1650.....	51,700	1830.....	12,866,020	1,753,588	7.3	1960.....	177,840,000
1660.....	84,800	1840.....	17,069,453	1,753,588	9.7	1965.....	190,296,000
1670.....	114,500	1850.....	23,191,876	2,944,337	7.9	1970.....	204,620,000
1680.....	155,600	1860.....	31,443,321	2,973,965	10.6	1975.....	221,522,000
1690.....	213,500	1870.....	39,818,449	2,973,965	13.4	NOTE C	
1700.....	275,000	1880.....	50,155,783	2,973,965	16.9	1960.....	177,840,000
1710.....	357,500	1890.....	62,947,714	2,973,965	21.2	1965.....	190,296,000
1720.....	474,388	1900.....	75,994,575	2,974,159	25.6	1970.....	202,984,000
1730.....	654,950	1910.....	91,972,266	2,973,890	30.9	1975.....	214,580,000
1740.....	889,000	1920.....	105,710,620	2,973,776	35.5	NOTE D	
1750.....	1,207,000	1930.....	122,775,046	2,977,128	41.2	1960.....	176,452,000
1760.....	1,610,000	1940.....	131,669,275	2,977,128	44.2	1965.....	186,291,000
1770.....	2,205,000	1950.....	151,132,000†	2,974,726	50.8	1970.....	196,370,000
1780.....	2,781,000	1957*.....	170,510,000†	2,974,726	57.3	1975.....	206,907,000

* Estimate, April 1, 1957. † Includes armed forces overseas. NOTE A: Projections assuming birth rates of 1954-55 remain constant. NOTE B: Projections assuming birth rates of 1950-53 remain constant. NOTE C: Projections assuming birth rates of 1950-53 remain constant to 1965 and then decline. NOTE D: Projections assuming birth rates of 1950-53 decline rapidly to roughly the prewar level by 1975.

Estimates of World Population by Regions, 1650-1950

Source: W. F. Willcox, 1650-1900; United Nations, 1920-1950.

Date	Estimated population in millions						World total
	Africa	North America*	Latin America†	Asia (exc. U.S.S.R.)‡	Europe and Asiatic U.S.S.R.‡	Oceania	
1650.....	100	1	7	257	103	2	470
1750.....	100	1	10	437	144	2	694
1800.....	100	6	23	505	193	2	919
1850.....	100	26	33	656	274	2	1,091
1900.....	141	81	63	857	423	6	1,571
1920.....	136	115	92	997	485	9	1,834
1930.....	155	134	110	1,069	530	10	2,008
1940.....	177	144	132	1,173	579	11	2,216
1950.....	199	166	162	1,272	594	13	2,406

* United States, Canada, Alaska, St. Pierre and Miquelon. † Mexico, Central and South America and Caribbean Islands. ‡ Estimates for Asia and Europe by Willcox have been adjusted so as to include the population of Asiatic U.S.S.R. with that of Europe rather than Asia.

Distribution of U. S. Population According to Size of Place, 1790 to 1950

Source: U. S. Bureau of the Census.

Census year	Total population	Population distribution (Total for year = 100%)					Number of urban places of specified size		
		Total urban	Urban places of			Total rural	1,000,000 or more	100,000 to 1,000,000	Under 100,000
			1,000,000 or more	100,000 to 1,000,000	Under 100,000				
1790.....	3,929,214	5.1	—	—	5.1	94.9	—	—	24
1800.....	5,308,483	6.1	—	—	6.1	93.9	—	—	33
1810.....	7,239,881	7.3	—	—	7.3	92.7	—	—	46
1820.....	9,638,453	7.2	—	1.3	5.9	92.8	—	1	60
1830.....	12,866,020	8.8	—	1.6	7.2	91.2	—	1	89
1840.....	17,069,453	10.8	—	3.0	7.8	89.2	—	3	128
1850.....	23,191,876	15.3	—	5.1	10.2	84.7	—	6	230
1860.....	31,443,321	19.8	—	8.4	11.4	80.2	—	9	383
1870.....	38,558,371	25.7	—	10.7	15.0	74.3	—	14	649
1880.....	50,155,783	28.2	2.4	10.0	15.8	71.8	1	19	919
1890.....	62,947,714	35.1	5.8	9.6	19.7	64.9	3	25	1,320
1900.....	75,994,575	39.7	8.5	10.2	21.0	60.3	3	35	1,699
1910.....	91,972,266	45.7	9.2	12.9	23.6	54.3	3	47	2,212
1920.....	105,710,620	51.2	9.6	16.3	25.3	48.8	3	65	2,654
1930.....	122,775,046	56.2	12.3	17.3	26.6	43.8	5	88	3,072
1940.....	131,669,275	56.5	12.1	16.8	27.6	43.5	5	87	3,372
1950*.....	150,697,361	59.0	11.5	18.0	29.5	41.0	5	102	3,916
1950†.....	150,697,361	64.0	11.5	17.9	34.6	36.0	5	101	4,635

* Old urban definition. † New urban definition.

White and Negro Population by State, 1950 Census

Source: U. S. Bureau of the Census.

State	White	Negro	Other	State	White	Negro	Other
Alabama.....	2,079,591	979,617	2,535	Nebraska.....	1,301,328	19,234	4,948
Arizona.....	654,511	25,974	69,102	Nevada.....	149,908	4,302	5,873
Arkansas.....	1,481,507	426,639	1,365	New Hampshire..	532,275	731	236
California.....	9,915,173	462,172	208,878	New Jersey.....	4,511,585	318,565	5,179
Colorado.....	1,296,653	20,177	8,259	New Mexico.....	630,211	8,408	42,568
Connecticut.....	1,952,329	53,472	1,479	New York.....	13,872,095	918,191	39,906
Delaware.....	273,878	43,598	609	North Carolina..	2,983,121	1,047,353	31,455
D. C.....	517,865	280,803	3,510	North Dakota.....	608,448	257	10,931
Florida.....	2,166,051	603,101	2,153	Ohio.....	7,428,222	513,072	5,333
Georgia.....	2,380,577	1,062,762	1,239	Oklahoma.....	2,032,526	145,503	55,322
Idaho.....	581,395	1,050	6,192	Oregon.....	1,497,128	11,529	12,684
Illinois.....	8,046,058	645,980	20,138	Pennsylvania.....	9,853,848	638,485	5,679
Indiana.....	3,758,512	174,168	1,544	Rhode Island.....	777,015	13,903	978
Iowa.....	2,599,546	19,692	1,835	South Carolina..	1,293,405	822,077	1,545
Kansas.....	1,828,961	73,158	3,180	South Dakota....	628,504	727	23,509
Kentucky.....	2,742,090	201,921	795	Tennessee.....	2,760,257	530,603	858
Louisiana.....	1,796,683	882,428	4,405	Texas.....	6,726,534	977,458	7,202
Maine.....	910,846	1,221	1,707	Utah.....	676,909	2,729	9,224
Maryland.....	1,954,975	385,972	2,054	Vermont.....	377,188	443	116
Massachusetts.....	4,611,503	73,171	5,840	Virginia.....	2,581,555	734,211	2,914
Michigan.....	5,917,825	442,296	11,645	Washington.....	2,316,496	30,691	31,776
Minnesota.....	2,953,697	14,022	14,764	West Virginia....	1,890,282	114,867	403
Mississippi.....	1,188,632	986,494	3,788	Wisconsin.....	3,392,690	28,182	13,703
Missouri.....	3,655,593	297,088	1,972	Wyoming.....	284,009	2,557	3,963
Montana.....	572,038	1,232	17,754	TOTAL U. S.....	134,942,028	15,042,286	713,047

Distribution of U. S. Population by Race, 1850-1950

Source: U. S. Bureau of the Census.

Year	White	Nonwhite					Total Nonwhite
		Negro	Indian	Japanese	Chinese	All other	
1850.....	19,553,068	3,638,808	.....	.....	.....	.....	3,638,808
1860.....	26,922,537	4,441,830	44,021	.....	34,933	.....	4,520,784
1870.....	33,589,377	4,880,009	25,731	55	63,199	.....	4,968,994
1880.....	43,402,970	6,580,793	66,407	148	105,465	.....	6,752,813
1890.....	55,101,258	7,488,676	248,253	2,039	107,488	.....	7,846,456
1900.....	66,809,196	8,833,994	237,196	24,326	89,863	.....	9,185,379
1910.....	81,731,957	9,827,763	265,683	72,157	71,531	3,175	10,240,309
1920.....	94,820,915	10,465,131	244,437	111,010	61,639	9,488	10,889,705
1930.....	110,286,740	11,891,143	332,397	138,834	74,954	50,978	12,488,306
1940.....	118,214,870	12,865,518	333,969	126,947	77,504	50,467	13,454,405
1950.....	134,942,028	15,042,286	343,410	141,768	117,629	110,240	15,755,333
Urban.....	86,756,435	9,392,608	56,108	100,735	109,434	52,366	9,711,251
Rural nonfarm.....	28,470,339	2,491,377	178,678	14,260	5,844	20,827	2,710,986
Rural farm.....	19,715,254	3,158,301	108,624	26,773	2,351	37,047	3,333,096

United States Population Distribution by Age, Race, Nativity and Sex, 1850-1956

Source: Mortimer Spiegelman, *Introduction to Demography*, and Bureau of Census

Year	Total	Age					Race and Nativity			
		Under 5	5-19	20-44	45-64	65 and over	White			Nonwhite
							Total	Native born	Foreign born	
Per cent distribution										
1850*	100.0	15.1	37.4	35.1	9.8	2.6	84.3	74.6	9.7	15.7
1860†	100.0	15.4	35.8	35.7	10.4	2.7	85.6	72.6	13.0	14.4
1870†	100.0	14.3	35.4	35.4	11.9	3.0	87.1	72.9	14.2	12.9
1880†	100.0	13.8	34.3	35.9	12.6	3.4	86.5	73.4	13.1	13.5
1890†	100.0	12.2	33.9	36.9	13.1	3.9	87.5	73.0	14.5	12.5
1900.....	100.0	12.1	32.3	37.8	13.7	4.1	87.9	74.5	13.4	12.1
1910.....	100.0	11.6	30.4	39.1	14.6	4.3	88.9	74.4	14.5	11.1
1920.....	100.0	11.0	29.8	38.4	16.1	4.7	89.7	76.7	13.0	10.3
1930.....	100.0	9.3	29.5	38.3	17.5	5.4	89.8	78.4	11.4	10.2
1940.....	100.0	8.0	26.4	38.9	19.8	6.9	89.8	81.1	8.7	10.2
1950§	100.0	10.7	23.2	37.7	20.3	8.1	89.5	82.8	6.7	10.5
1956§	100.0	11.1	25.7	34.4	20.2	8.6	¶	¶	¶	¶
Males per 100 females										
1850*	104.3	102.4	100.9	108.1	106.4	101.3	105.2	103.1	123.8	99.1
1860†	104.7	102.4	101.2	107.9	111.5	98.3	105.3	103.7	115.1	101.2
1870†	102.2	102.9	101.2	99.2	114.5	100.5	102.8	100.6	115.3	98.4
1880†	103.6	103.0	101.3	104.0	110.2	101.4	104.0	102.1	115.9	100.7
1890†	105.0	103.6	101.4	107.3	108.3	104.2	105.4	102.9	118.7	102.2
1900.....	104.4	102.1	100.9	105.8	110.7	102.0	104.9	102.8	117.4	101.0
1910.....	106.0	102.5	101.3	108.1	114.4	101.1	106.6	102.7	129.2	101.3
1920.....	104.0	102.5	100.8	102.8	115.2	101.3	104.4	101.7	121.7	100.9
1930.....	102.5	103.0	101.4	100.5	109.1	100.5	102.9	101.1	115.8	99.1
1940.....	100.7	103.2	102.0	98.1	105.2	95.5	101.2	100.1	111.1	96.7
1950§	99.0	103.9	102.9	97.0	100.2	89.6	99.4	99.0	103.9	96.2
1956§	98.4	103.9	103.9	97.4	96.1	85.7	¶	¶	¶	¶

* Excludes nonwhite races other than Negro. † Excludes Indians in Indian Territory and on Indian reservations. ‡ The age figures exclude all persons residing on Indian reservations, whether white or nonwhite; these persons are included in the race and nativity distributions. § Includes armed forces overseas and other persons abroad. ¶ Not available. NOTE: For 1850 and 1860, the data in the census reports at ages 40-49 and 60-69 are published in 10-year age groupings; these were subdivided into 5-year age groupings by the author.

U. S. Population by Age, Sex and Race, July 1, 1956

Source: U. S. Bureau of the Census.

Age	White		Nonwhite		Total	
	Male	Female	Male	Female	Male	Female
Under 5 years.....	8,575,000	8,162,000	1,379,000	1,366,000	9,954,000	9,529,000
Under 1 year.....	1,775,000	1,689,000	288,000	286,000	2,062,000	1,975,000
1 and 2 years.....	3,471,000	3,302,000	567,000	563,000	4,038,000	3,865,000
3 and 4 years.....	3,330,000	3,170,000	524,000	518,000	3,854,000	3,689,000
5 to 9 years.....	8,036,000	7,657,000	1,187,000	1,173,000	9,223,000	8,830,000
10 to 14 years.....	6,151,000	5,896,000	833,000	835,000	6,984,000	6,731,000
15 to 19 years.....	5,074,000	4,903,000	722,000	723,000	5,796,000	5,626,000
20 to 24 years.....	4,737,000	4,669,000	639,000	666,000	5,376,000	5,335,000
25 to 29 years.....	5,152,000	5,160,000	614,000	691,000	5,766,000	5,851,000
30 to 34 years.....	5,437,000	5,618,000	620,000	698,000	6,057,000	6,315,000
35 to 39 years.....	5,223,000	5,387,000	547,000	616,000	5,770,000	6,003,000
40 to 44 years.....	4,993,000	5,154,000	538,000	608,000	5,531,000	5,763,000
45 to 49 years.....	4,599,000	4,712,000	483,000	516,000	5,082,000	5,228,000
50 to 54 years.....	4,006,000	4,118,000	416,000	433,000	4,422,000	4,551,000
55 to 59 years.....	3,541,000	3,719,000	338,000	346,000	3,879,000	4,065,000
60 to 64 years.....	3,042,000	3,250,000	251,000	259,000	3,293,000	3,509,000
65 to 69 years.....	2,429,000	2,641,000	182,000	187,000	2,611,000	2,828,000
70 to 74 years.....	1,790,000	2,085,000	128,000	137,000	1,918,000	2,222,000
75 to 79 years.....	1,105,000	1,372,000	86,000	95,000	1,191,000	1,467,000
80 to 84 years.....	555,000	726,000	43,000	46,000	597,000	772,000
85 years and over.....	308,000	433,000	34,000	44,000	342,000	477,000
All ages.....	74,425,000	75,399,000	8,930,000	9,338,000	83,355,000	84,737,000
5 to 17 years.....	17,294,000	16,548,000	2,462,000	2,451,000	19,757,000	18,999,000
14 years and over.....	53,131,000	55,047,000	5,798,000	6,223,000	58,929,000	61,269,000
18 years and over.....	48,882,000	50,953,000	5,199,000	5,622,000	54,082,000	56,574,000
21 years and over.....	45,951,000	48,108,000	4,782,000	5,206,000	50,732,000	53,314,000
65 years and over.....	6,186,000	7,257,000	473,000	509,000	6,660,000	7,767,000
Median age, years.....	29.8	31.3	23.6	25.0	29.1	30.7

NOTE: Data relate to the total population of the continental United States, including the armed forces overseas.

Immigrants and Emigrants; United States, 1911-1956

Source: U. S. Immigration and Naturalization Service and U. S. Bureau of the Census.

Period*	Immigrants	Emigrants	Excess of immigrants over emigrants	Period*	Immigrants	Emigrants	Excess of immigrants over emigrants
1911-15.....	4,459,831	1,444,530	3,015,301	1936-40.....	308,222	135,875	172,347
1916-20.....	1,275,980	702,464	573,516	1941-45.....	170,952	42,696	128,256
1921-25.....	2,638,913	697,397	1,941,516	1946-50.....	864,087	113,703	750,384
1926-30.....	1,468,296	347,679	1,120,617	1951-55.....	1,087,638	134,220	953,418
1931-35.....	220,209	323,863	-103,654	1956.....	321,625	22,824	298,801

* Fiscal years ending June 30.

Persons Naturalized Since 1907

Source: U. S. Immigration and Naturalization Service.

Period *	Civilian	Military	Total	Period *	Civilian	Military	Total
1907-10.....	111,738	.....	111,738	1952.....	87,070	1,585	88,655
1911-20.....	884,672	244,300	1,128,972	1953.....	90,476	1,575	92,051
1921-30.....	1,716,979	56,206	1,773,185	1954.....	104,086	13,745	117,831
1931-40.....	1,498,573	19,891	1,518,464	1955.....	197,568	11,958	209,526
1941-50.....	1,837,229	149,799	1,987,028	1956.....	138,681	7,204	145,885
1951.....	53,741	975	54,716	1907-56.....	6,720,813	507,238	7,228,051

* Fiscal years ending June 30.

Immigration by Country of Origin, 1820 to 1956

Source: Immigration and Naturalization Service.

(Figures are totals, not annual averages, and were tabulated as follows: 1820-67, alien passengers arrived; 1868-91 and 1895-97, immigrant aliens arrived; 1892-94 and 1898 to present, immigrant aliens admitted. Data before 1906 relate to country whence alien came; since 1906, to country of last permanent residence.)

Countries	1820-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1956	1820-1956
Europe: Albania ¹			1,663	2,040	85	21	3,809
Austria ²	3,172,461	453,649	32,868	3,563	24,860	49,861	3,737,262
Belgium.....	103,796	33,746	15,846	4,817	12,189	12,542	182,936
Bulgaria ³	39,440	22,533	2,945	938	375	52	66,283
Czechoslovakia ⁴		3,426	102,194	14,393	8,347	346	128,706
Denmark.....	258,053	41,983	32,430	2,559	5,393	6,320	346,738
Estonia ¹			1,576	506	212	99	2,393
Finland ¹		756	16,691	2,146	2,503	2,871	24,967
France.....	470,868	61,897	49,610	12,623	38,809	28,163	661,970
Germany ²	5,351,746	143,945	412,202	114,058	226,578	326,423	6,574,952
Great Britain: England.....	2,212,071	249,944	157,420	21,756	112,252	85,591	2,839,034
Scotland.....	488,749	78,357	159,781	6,887	16,131	18,046	767,951
Wales.....	59,540	13,107	13,012	735	3,209	1,518	91,121
Not specified ⁴	793,741					2,976	796,717
Greece.....	186,204	184,201	51,084	9,119	8,973	31,303	470,884
Hungary ²		442,693	30,680	7,861	3,469	443	485,146
Ireland.....	4,212,169	146,181	220,591	13,167	26,967	26,458	4,645,533
Italy.....	3,086,356	1,109,524	455,315	68,028	57,661	112,579	4,889,463
Latvia ¹			3,399	1,192	361	161	5,113
Lithuania ¹			6,015	2,201	683	85	8,984
Luxemburg ¹		727	727	565	820	395	2,507
Netherlands.....	175,943	43,718	26,948	7,150	14,860	21,285	289,904
Norway ⁶	665,189	66,395	68,531	4,740	10,100	13,607	828,562
Poland ⁶	165,182	4,813	227,734	17,026	7,571	928	423,254
Portugal.....	132,989	89,732	29,994	3,329	7,423	7,178	270,645
Rumania ⁷	72,117	13,311	67,646	3,871	1,076	276	158,297
Spain.....	69,296	68,611	28,958	3,258	2,898	3,657	176,678
Sweden ⁸	1,021,165	95,074	97,249	3,960	10,665	11,996	1,240,109
Switzerland.....	237,401	23,091	29,676	5,512	10,547	10,023	316,250
Turkey in Europe.....	85,800	54,677	14,659	737	580	750	157,203
U.S.S.R. ⁹	2,359,048	921,201	61,742	1,356	548	137	3,344,032
Yugoslavia ¹⁰		1,888	49,064	5,835	1,576	3,419	61,782
Other Europe.....	2,605	8,111	9,603	2,361	3,983	5,592	32,255
Total Europe.....	25,421,929	4,376,564	2,477,853	348,289	621,704	785,101	34,031,440
Asia: China.....	326,060	21,278	29,907	4,928	15,709	3,334	402,216
India.....	5,409	2,082	1,886	496	1,761	859	12,493
Japan ⁹	158,344	83,837	33,462	1,948	1,555	20,627	299,773
Turkey in Asia ¹⁰	106,481	79,389	19,165	328	218	163	205,744
Other Asia.....	16,942	5,973	12,980	7,644	11,537	34,729	89,805
Total Asia ¹⁶	613,236	192,559	97,400	15,344	31,780	59,712	1,010,031
America: Canada & Newfoundland ¹¹	1,230,501	742,185	924,515	108,527	171,718	205,188	3,382,634
Central America.....	10,365	17,159	15,769	5,861	21,665	19,547	90,366
Mexico ¹²	77,645	219,004	459,287	22,319	60,589	168,082	1,006,926
South America.....	29,385	41,899	42,215	7,803	21,831	37,114	180,247
West Indies.....	233,146	123,424	74,899	15,502	49,725	62,001	558,697
Other America ¹³			31	25	29,276	45,134	74,466
Total America.....	1,581,042	1,143,671	1,516,716	160,037	354,804	537,066	5,293,336
Africa.....	9,581	8,443	6,286	1,750	7,367	6,567	39,994
Australia & New Zealand.....	31,654	12,348	8,299	2,231	13,805	4,725	73,062
Pacific Islands ¹⁵	8,859	1,079	427	780	5,437	3,674	20,256
Countries not specified.....	252,691 ¹⁴	1,147	228		142		
Total all countries.....	27,918,992	5,735,811	4,107,209	528,431	1,035,039	1,409,263	40,734,745

¹ Countries established since beginning of World War I are theretofore included with countries to which they belonged. ² Data for Austria-Hungary not reported until 1861. Austria and Hungary recorded separately after 1905. Austria included with Germany 1938-45. ³ Bulgaria, Serbia, Montenegro first reported in 1899. Bulgaria reported separately since 1920. In 1920, separate enumeration for Kingdom of Serbs, Croats, Slovenes; since 1922, recorded as Yugoslavia. ⁴ United Kingdom not specified; for 1901-51, included in "Other Europe." ⁵ Norway included with Sweden 1820-68. ⁶ Included with Austria-Hungary, Germany and Russia 1899-1919. ⁷ No record of immigration record of immigration until 1861. ⁸ No record of immigration until 1869. ⁹ Includes all British North American possessions 1820-98. ¹⁰ No record of immigration 1886-93. ¹¹ Included with "Countries not specified" prior to 1925. ¹² Includes 32,897 persons returning in 1906 to their homes in U.S. ¹³ From 1952, Asia included Philippines. From 1934-51, Philippines included in Pacific Islands; before 1934, recorded in separate tables as insular travel.

United States Population by State, 1790 to 1956

Source: U. S. Bureau of the Census.

States	Population			1950			July 1, 1956	
	1790	1850	1900	Population	Land area, sq. mi.	Pop. per sq. mi.	Population	Rank
Alabama.....		771,623	1,828,697	3,061,743	51,078	59.9	3,135,000	19
Arizona.....			122,931	749,587	113,575	6.6	1,057,000	35
Arkansas.....		209,897	1,311,564	1,909,511	52,675	36.6	1,815,000	31
California.....		92,597	1,485,053	10,586,223	156,740	67.5	13,433,000	2
Colorado.....			539,700	1,325,089	103,922	12.8	1,612,000	33
Connecticut.....	237,946	370,792	908,420	2,007,280	4,899	409.7	2,232,000	27
Delaware.....	59,096	91,532	184,735	318,085	1,978	160.8	402,000	46
D. C.....		51,687	278,718	802,178	61	13,150.5	866,000	37
Florida.....		87,445	528,542	2,771,305	54,262	51.1	3,770,000	13
Georgia.....	82,548	906,185	2,216,331	3,444,578	58,483	58.9	3,712,000	15
I Idaho.....			161,772	588,637	82,769	7.1	625,000	44
Illinois.....		851,470	4,821,550	8,712,176	55,935	155.8	9,432,000	4
Indiana.....		988,416	2,516,462	3,934,224	36,205	108.7	4,413,000	11
Iowa.....		192,214	2,231,853	2,621,073	56,045	46.8	2,692,000	23
Kansas.....			1,470,495	1,905,299	82,108	23.2	2,103,000	29
Kentucky.....	73,677	982,405	2,147,174	2,944,806	39,864	73.9	3,017,000	20
Louisiana.....		517,762	1,381,625	2,683,516	45,162	59.4	3,004,000	21
Maine.....	96,540	583,169	694,466	913,774	31,040	29.4	910,000	36
Maryland.....	319,728	583,034	1,188,044	2,343,001	9,881	237.1	2,812,000	22
Massachusetts.....	378,787	994,514	2,805,346	4,690,514	7,867	596.2	4,812,000	9
Michigan.....		397,654	2,420,982	6,371,766	57,022	111.7	7,516,000	7
Minnesota.....		6,077	1,751,394	2,982,483	80,009	37.3	3,241,000	18
Mississippi.....		606,526	1,551,270	2,178,914	47,248	46.1	2,124,000	28
Missouri.....		682,044	3,106,665	3,954,653	69,226	57.1	4,255,000	12
Montana.....			243,329	591,024	145,878	4.1	638,000	43
Nebraska.....			1,066,300	1,325,510	76,663	17.3	1,414,000	34
Nevada.....		42,335	160,083	109,789	109,789	1.5	247,000	49
New Hampshire.....	141,885	317,976	411,588	533,242	9,017	59.1	560,000	45
New Jersey.....	184,139	489,555	1,883,669	4,835,329	7,522	642.8	5,403,000	8
New Mexico.....		61,547	195,310	681,187	121,511	5.6	815,000	39
New York.....	340,120	3,097,394	7,268,894	14,830,192	47,944	309.3	16,195,000	1
North Carolina.....	393,751	869,039	1,893,810	4,061,929	49,097	82.7	4,423,000	10
North Dakota.....			319,146	619,636	70,057	8.8	657,000	42
Ohio.....		1,980,329	4,157,545	7,946,627	41,000	193.8	9,096,000	5
Oklahoma.....			790,391*	2,233,351	69,031	32.4	2,237,000	26
Oregon.....		13,294	413,536	1,521,341	96,315	15.8	1,718,000	32
Pennsylvania.....	434,373	2,311,786	6,302,115	10,498,012	45,045	233.1	10,964,000	3
Rhode Island.....	68,825	147,545	428,556	791,896	1,058	748.5	828,000	38
South Carolina.....	249,073	668,507	1,340,316	2,117,027	30,305	69.9	2,353,000	25
South Dakota.....			401,570	652,740	76,536	8.5	696,000	41
Tennessee.....	35,691	1,002,717	2,020,616	3,291,718	41,797	78.8	3,466,000	17
Texas.....		212,592	3,048,710	7,711,194	263,513	29.3	8,925,000	6
Utah.....		11,380	276,749	688,862	82,346	8.4	812,000	40
Vermont.....	85,425	314,120	343,641	377,747	9,278	40.7	370,000	47
Virginia.....	747,610	1,421,661	1,854,184	3,318,680	39,893	83.2	3,651,000	16
Washington.....			518,103	2,378,963	66,786	35.6	2,667,000	24
West Virginia.....			958,800	2,005,552	24,080	83.3	1,983,000	30
Wisconsin.....		305,391	2,069,042	3,434,575	54,705	62.8	3,764,000	14
Wyoming.....			92,531	290,529	97,506	3.0	321,000	48

* Includes population of Indian Territory: 1900, 392,060.

Population and Area of Major U. S. Cities, Census Years, 1920-1950

(Over 50,000 population in 1950)

Source: U. S. Bureau of the Census.

City	1920 population	1930 population	1940 population	1950 population	% increase, 1940-50	1950 rank	Area sq. mi.*
Akron, Ohio	208,435	255,040	244,791	274,605	12.2	39	53.7
Alameda, Calif.	28,806	35,033	36,256	64,430	77.7	184	10.7
Albany, N. Y.	113,344	127,412	130,577	134,995	3.4	68	19.0
Albuquerque, N. Mex.	15,157	26,570	35,449	96,815	173.1	112	47.9
Alexandria, Va.	18,060	24,149	33,523	61,787	84.3	192	7.5
Alhambra, Calif.	9,096	29,472	38,935	51,359	31.9	224	7.0
Allentown, Pa.	73,502	92,563	96,904	106,756	10.2	99	15.9
Altoona, Pa.	60,331	82,054	80,214	77,177	-3.8	150	10.0
Amarillo, Tex.	15,494	43,132	51,686	74,246	43.6	155	20.9
Asheville, N. C.	28,504	50,193	51,310	53,000	3.3	215	14.5
Atlanta, Ga.	200,616	270,366	302,288	331,314	9.6	33	36.9
Atlantic City, N. J.	50,707	66,198	64,094	61,657	-3.8	193	11.5
Augusta, Ga.	52,548	60,342	65,919	71,508	8.5	165	9.8
Aurora, Ill.	36,397	46,589	47,170	50,576	7.2	230	8.1
Austin, Tex.	34,876	53,120	87,930	132,459	50.6	72	32.1
Baltimore, Md.	733,826	804,874	859,100	949,708	10.5	6	78.7
Baton Rouge, La.	21,782	30,729	34,719	125,629	261.8	81	30.2
Bay City, Mich.	47,554	47,355	47,956	52,523	9.5	218	9.6
Bayonne, N. J.	76,754	88,979	79,198	77,203	-2.5	149	5.2
Beaumont, Tex.	40,422	57,732	59,061	94,014	59.2	118	31.4
Berkeley, Calif.	56,036	82,109	85,547	113,805	33.0	90	9.5
Berwyn, Ill.	14,150	47,027	48,451	51,280	5.8	225	3.8
Bethlehem, Pa.	50,358	57,892	58,490	66,340	13.4	176	18.6
Binghamton, N. Y.	66,800	76,662	78,309	80,674	3.0	139	10.1
Birmingham, Ala.	178,806	259,678	267,538	326,037	21.8	34	65.3
Boston, Mass.	748,060	781,188	770,816	801,444	4.0	10	47.8
Bridgeport, Conn.	143,555	146,716	147,121	158,709	7.9	63	14.6
Brockton, Mass.	66,254	63,797	62,343	62,860	0.8	191	21.4
Buffalo, N. Y.	506,775	573,076	575,901	580,132	0.7	15	39.4
Burbank, Calif.	2,913	16,662	34,337	78,577	128.8	146	16.8
Cambridge, Mass.	109,694	113,643	110,879	120,740	8.9	86	6.2
Camden, N. J.	116,309	118,700	117,536	124,555	6.0	85	8.6
Canton, Ohio	87,091	104,906	108,401	116,912	7.9	88	14.1
Cedar Rapids, Iowa	45,566	56,097	62,120	72,296	16.4	161	25.4
Charleston, S. C.	67,957	62,265	71,275	70,174	-1.5	170	5.1
Charleston, W. Va.	39,608	60,408	67,914	73,501	8.2	159	9.6
Charlotte, N. C.	46,338	82,675	100,899	134,042	32.8	69	30.0
Chattanooga, Tenn.	57,895	119,798	128,163	131,041	2.2	73	28.0
Chester, Pa.	58,030	59,164	59,285	66,039	11.4	179	4.7
Chicago, Ill.	2,701,705	3,376,438	3,396,808	3,620,962	6.6	2	207.5
Cicero, Ill.	44,995	66,602	64,712	67,544	4.4	173	5.8
Cincinnati, Ohio	401,247	451,160	455,610	503,998	10.6	18	75.1
Cleveland, Ohio	796,841	900,429	878,336	914,808	4.2	7	75.0
Cleveland Heights, Ohio	15,236	50,945	54,992	59,141	7.5	198	8.2
Clifton, N. J.	26,470	46,875	48,827	64,511	32.1	182	11.7
Columbia, S. C.	37,524	51,581	62,396	86,914	39.3	129	12.8
Columbus, Ga.	31,125	43,131	53,280	79,611	49.4	142	12.0
Columbus, Ohio	237,031	290,564	306,087	375,901	22.8	28	39.4
Corpus Christi, Tex.	10,522	27,741	57,301	108,287	89.0	97	21.5
Covington, Ky.	57,121	65,252	62,018	64,452	3.9	183	6.4
Cranston, R. I.	29,407	42,911	47,085	55,060	16.9	210	28.7
Dallas, Tex.	158,976	260,475	294,734	434,462	47.4	22	112.0
Davenport, Iowa	56,727	60,751	66,039	74,549	12.9	152	18.1
Dayton, Ohio	152,559	200,982	210,718	243,872	15.7	44	25.0
Dearborn, Mich.	2,470	50,358	63,584	94,994	49.4	117	25.3
Decatur, Ill.	43,818	57,510	59,305	66,269	11.7	177	9.3
Denver, Colo.	256,491	287,861	322,412	415,786	29.0	24	66.8
Des Moines, Iowa	126,468	142,559	159,819	177,965	11.4	53	54.9
Detroit, Mich.	993,678	1,568,662	1,623,452	1,849,568	13.9	5	139.6
Duluth, Minn.	98,917	101,463	101,065	104,511	3.4	102	62.3
Durham, N. C.	21,719	52,037	60,195	71,311	18.5	166	13.2
East Chicago, Ind.	35,967	54,784	54,637	54,263	-0.7	213	10.4

City	1920 population	1930 population	1940 population	1950 population	% increase, 1940-50	1950 rank	Area, sq. mi.*
East Orange, N. J.	50,710	68,020	68,945	79,340	15.1	143	3.9
East St. Louis, Ill.	66,767	74,347	75,609	82,295	8.8	135	13.4
El Paso, Tex.	77,560	102,421	96,810	130,485	34.8	75	25.6
Elizabeth, N. J.	95,783	114,589	109,912	112,817	2.6	91	11.7
Erie, Pa.	93,372	115,967	116,955	130,803	11.8	74	18.8
Evanston, Ill.	37,234	63,338	65,389	73,641	12.6	158	8.2
Evansville, Ind.	85,264	102,249	97,062	128,636	32.5	78	18.0
Fall River, Mass.	120,485	115,274	115,428	111,963	-3.0	92	33.9
Flint, Mich.	91,599	156,492	151,543	163,143	7.7	60	29.3
Fort Wayne, Ind.	86,549	114,946	118,410	133,607	12.8	71	18.8
Fort Worth, Tex.	106,482	163,447	177,662	278,778	56.9	38	93.7
Fresno, Calif.	45,086	52,513	60,685	91,669	51.1	124	15.0
Gadsden, Ala.	14,737	24,042	36,975	55,725	50.7	207	27.2
Galveston, Tex.	44,255	52,938	60,862	66,568	9.4	175	8.1
Gary, Ind.	55,378	100,426	111,719	133,911	19.9	70	41.6
Glendale, Calif.	13,536	62,736	82,582	95,702	15.9	115	20.3
Grand Rapids, Mich.	137,634	168,592	164,292	176,515	7.4	55	23.4
Green Bay, Wis.	31,017	37,415	46,235	52,735	14.1	216	13.9
Greensboro, N. C.	19,861	53,569	59,319	74,389	25.4	153	18.2
Greenville, S. C.	23,127	29,154	34,734	58,161	67.4	201	16.2
Hamilton, Ohio	39,675	52,176	50,592	57,951	14.5	202	7.6
Hammond, Ind.	36,004	64,560	70,184	87,594	24.8	128	23.5
Harrisburg, Pa.	75,917	80,339	83,893	89,544	6.7	126	6.3
Hartford, Conn.	138,036	164,072	166,267	177,397	6.7	54	17.4
Hoboken, N. J.	68,166	59,261	50,115	50,676	1.1	229	1.0
Holyoke, Mass.	60,203	56,537	53,750	54,661	1.7	211	21.0
Houston, Tex.	138,276	292,352	384,514	596,163	55.0	14	160.0
Huntington, W. Va.	50,177	75,572	78,836	86,353	9.5	130	14.0
Indianapolis, Ind.	314,194	364,161	386,972	427,173	10.4	23	55.2
Irrvington, N. J.	25,480	56,733	55,328	59,201	7.0	197	3.1
Jackson, Mich.	48,374	55,187	49,656	51,088	2.9	228	10.2
Jackson, Miss.	22,817	48,282	62,107	98,271	58.2	110	27.0
Jacksonville, Fla.	91,558	129,549	173,065	204,517	18.2	49	30.2
Jersey City, N. J.	298,103	316,715	301,173	299,017	-0.7	37	13.0
Johnstown, Pa.	67,327	66,993	66,668	63,232	-5.2	189	5.6
Joliet, Ill.	38,442	42,993	42,365	51,601	21.8	222	7.7
Kalamazoo, Mich.	48,487	54,786	54,097	57,704	6.7	203	8.8
Kansas City, Kans.	101,177	121,857	121,458	129,553	6.7	76	18.7
Kansas City, Mo.	324,410	399,746	399,178	456,622	14.4	20	80.6
Kenosha, Wis.	40,472	50,262	48,765	54,368	11.5	212	7.6
Knoxville, Tenn.	77,818	105,802	111,580	124,769	11.8	83	25.4
Lakewood, Ohio	41,732	70,509	69,160	68,071	-1.6	171	5.6
Lancaster, Pa.	53,150	59,949	61,345	63,774	4.0	186	4.3
Lansing, Mich.	57,327	78,397	78,753	92,129	17.0	121	14.1
Laredo, Tex.	22,710	32,618	39,274	51,910	32.2	221	13.5
Lawrence, Mass.	94,270	85,068	84,323	80,536	-4.5	140	6.7
Lexington, Ky.	41,534	45,736	49,304	55,534	12.6	209	5.7
Lima, Ohio	41,326	42,287	44,711	50,246	12.4	231	7.7
Lincoln, Nebr.	54,948	75,933	81,984	98,884	20.6	109	23.8
Little Rock, Ark.	65,142	81,679	88,039	102,213	16.1	105	21.0
Long Beach, Calif.	55,593	142,032	164,271	250,767	52.7	41	34.7
Lorain, Ohio	37,295	44,512	44,125	51,202	16.0	226	11.0
Los Angeles, Calif.	576,673	1,238,048	1,504,277	1,970,358	31.0	4	450.9
Louisville, Ky.	234,891	307,745	319,077	369,129	15.7	30	39.9
Lowell, Mass.	112,759	100,234	101,389	97,249	-4.1	111	12.9
Lubbock, Tex.	4,051	20,520	31,853	71,747	125.2	163	17.0
Lynn, Mass.	99,148	102,320	98,123	99,738	1.6	107	10.4
McKeesport, Pa.	46,781	54,632	55,355	51,502	-7.0	223	3.5
Macon, Ga.	52,995	53,829	57,865	70,252	21.4	169	12.0
Madison, Wis.	38,378	57,899	67,447	96,056	42.4	114	15.4
Malden, Mass.	49,103	58,036	58,010	59,804	3.1	195	4.8
Manchester, N. H.	78,384	76,834	77,685	82,732	6.5	134	32.1
Medford, Mass.	39,038	59,714	63,083	66,113	4.8	178	8.1
Memphis, Tenn.	162,351	253,143	292,942	396,000	35.2	26	104.2
Miami, Fla.	29,571	110,637	172,172	249,276	44.8	42	34.2
Milwaukee, Wis.	457,147	578,249	587,472	637,392	8.5	13	50.0
Minneapolis, Minn.	380,582	464,356	492,370	521,718	6.0	17	53.8
Mobile, Ala.	60,777	68,202	78,720	129,009	63.9	77	25.4
Montgomery, Ala.	43,464	66,079	78,084	106,525	36.4	100	26.1
Mount Vernon, N. Y.	42,726	61,499	67,362	71,899	6.7	162	4.1

City	1920 population	1930 population	1940 population	1950 population	% increase, 1940-50	1950 rank	Area, sq. mi.*
Muncie, Ind.....	36,524	46,548	49,720	58,479	17.6	200	10.0
Nashville, Tenn.....	118,342	153,866	167,402	174,307	4.1	56	22.0
New Bedford, Mass.....	121,217	112,597	110,341	109,189	-1.0	96	19.1
New Britain, Conn.....	59,316	68,128	68,685	73,726	7.3	156	13.7
New Haven, Conn.....	162,537	162,655	160,605	164,443	2.4	59	17.9
New Orleans, La.....	387,219	458,762	494,537	570,445	15.3	16	199.4
New Rochelle, N. Y.....	36,213	54,000	58,408	59,725	2.3	196	9.9
New York, N. Y.....	5,620,048	6,930,446	7,454,995	7,891,957	5.9	1	315.1
Bronx borough.....	732,016	1,265,258	1,394,711	1,451,277	4.1	...	43.4
Brooklyn borough.....	2,018,356	2,560,401	2,698,285	2,738,175	1.5	...	76.1
Manhattan borough.....	2,284,103	1,867,312	1,889,924	1,960,101	3.7	...	22.3
Queens borough.....	469,042	1,079,129	1,297,634	1,550,849	19.5	...	113.0
Richmond borough.....	116,531	158,346	174,441	191,555	9.8	...	60.3
Newark, N. J.....	414,524	442,337	429,760	438,776	2.1	21	23.6
Newton, Mass.....	46,054	65,276	69,873	81,994	17.3	136	17.3
Niagara Falls, N. Y.....	50,760	75,460	78,029	90,872	16.5	125	12.7
Norfolk, Va.....	115,777	129,710	144,332	213,513	47.9	48	28.2
Oak Park, Ill.....	39,858	63,982	66,015	63,529	-3.8	188	4.7
Oakland, Calif.....	216,261	284,063	302,163	384,575	27.3	27	53.0
Ogden, Utah.....	32,804	40,272	43,688	57,112	30.7	206	16.6
Oklahoma City, Okla.....	91,295	185,389	204,424	243,504	19.1	45	50.8
Omaha, Nebr.....	191,601	214,006	223,844	251,117	12.2	40	40.7
Orlando, Fla.....	9,282	27,330	36,736	52,367	42.5	219	14.1
Pasadena, Calif.....	45,354	76,086	81,864	104,577	27.7	101	21.3
Passaic, N. J.....	63,841	62,959	61,394	57,702	-6.0	204	3.1
Paterson, N. J.....	135,875	138,513	139,656	139,336	-0.2	66	8.1
Pawtucket, R. I.....	64,248	77,149	75,797	81,436	7.4	138	8.6
Peoria, Ill.....	76,121	104,969	105,087	111,856	6.4	93	12.9
Philadelphia, Pa.....	1,823,779	1,950,961	1,931,334	2,071,605	7.3	3	127.2
Phoenix, Ariz.....	29,053	48,118	65,414	106,818	63.3	98	17.1
Pittsburgh, Pa.....	588,343	669,817	671,659	676,806	0.8	12	54.2
Pittsfield, Mass.....	41,763	49,677	49,684	53,348	7.4	214	40.9
Pontiac, Mich.....	34,273	64,982	66,626	73,681	10.6	157	19.8
Port Arthur, Tex.....	22,251	50,902	46,140	57,530	24.7	205	12.2
Portland, Maine.....	69,272	70,810	73,643	77,634	5.4	148	21.6
Portland, Oreg.....	258,288	301,815	305,394	373,628	22.3	29	64.1
Portsmouth, Va.....	54,387	45,704	50,745	80,039	57.7	141	10.2
Providence, R. I.....	237,595	252,981	253,504	248,674	-1.9	43	17.9
Pueblo, Colo.....	43,050	50,096	52,162	63,685	22.1	187	10.6
Quincy, Mass.....	47,876	71,983	75,810	83,835	10.6	133	16.8
Racine, Wis.....	58,593	67,542	67,195	71,193	5.9	167	9.2
Raleigh, N. C.....	24,418	37,379	46,897	65,679	40.0	180	11.0
Reading, Pa.....	107,784	111,171	110,568	109,320	-1.1	95	8.8
Richmond, Calif.....	16,843	20,093	23,642	99,545	321.1	108	14.5
Richmond, Va.....	171,667	182,929	193,042	230,310	19.3	46	37.1
Roanoke, Va.....	50,842	69,206	69,287	91,921	32.7	122	26.5
Rochester, N. Y.....	295,750	328,132	324,975	332,488	2.3	32	36.0
Rockford, Ill.....	65,651	85,864	84,637	92,927	9.8	119	14.0
Sacramento, Calif.....	65,908	93,750	105,958	137,572	29.8	67	16.9
Saginaw, Mich.....	61,903	80,715	82,794	92,918	12.2	120	16.6
St. Joseph, Mo.....	77,939	80,935	75,711	78,588	3.8	145	14.1
St. Louis, Mo.....	772,897	821,960	816,048	856,796	5.0	8	61.0
St. Paul, Minn.....	234,698	271,606	287,736	311,349	8.2	35	52.2
St. Petersburg, Fla.....	14,237	40,425	60,812	96,738	59.1	113	52.2
Salt Lake City, Utah.....	118,110	140,267	149,934	182,121	21.5	52	53.9
San Angelo, Tex.....	10,050	25,308	25,802	52,093	101.9	220	28.8
San Antonio, Tex.....	161,379	231,542	253,854	408,442	60.9	25	69.5
San Bernardino, Calif.....	18,721	37,481	43,646	63,058	44.5	190	19.5
San Diego, Calif.....	74,361	147,995	203,341	334,387	64.4	31	99.4
San Francisco, Calif.....	506,676	634,394	634,536	* 775,357	22.2	11	44.6
San Jose, Calif.....	39,642	57,651	68,457	95,280	39.2	116	17.0
Santa Monica, Calif.....	15,252	37,146	53,500	71,595	33.8	164	8.0
Savannah, Ga.....	83,252	85,024	95,996	119,638	24.6	87	14.6
Schenectady, N. Y.....	88,723	95,692	87,549	91,785	4.8	123	10.2
Scranton, Pa.....	137,783	143,433	140,404	125,536	-10.6	82	24.9
Seattle, Wash.....	315,312	365,583	368,302	467,591	27.0	19	70.8
Shreveport, La.....	43,874	76,655	98,167	127,206	29.6	80	24.0
Sioux City, Iowa.....	71,227	79,183	82,364	83,991	2.0	132	45.0
Sioux Falls, S. Dak.....	25,202	33,362	40,832	52,696	29.1	217	12.7
Somerville, Mass.....	93,091	103,908	102,177	102,351	0.2	104	4.1

City	1920 population	1930 population	1940 1940-50	1950 population	% increase, population	1950 rank	Area, sq. mi.*
South Bend, Ind.	70,983	104,193	101,268	115,911	14.5	89	20.2
South Gate, Calif.		19,632	26,945	51,116	89.7	227	7.0
Spokane, Wash.	104,437	115,514	122,001	161,721	32.6	62	41.5
Springfield, Ill.	59,183	71,864	75,503	81,628	8.1	137	10.4
Springfield, Mass.	129,614	149,900	149,554	162,399	8.6	61	31.7
Springfield, Mo.	39,631	57,527	61,238	66,731	9.0	174	13.6
Springfield, Ohio	60,840	68,743	70,662	78,508	11.1	147	12.1
Stamford, Conn.	35,096	46,346	47,938	74,293	55.0	154	37.6
Stockton, Calif.	40,296	47,963	54,714	70,853	29.5	168	11.8
Syracuse, N. Y.	171,717	209,326	205,967	220,583	7.1	47	25.3
Tacoma, Wash.	96,965	106,817	109,408	143,673	31.3	65	47.9
Tampa, Fla.	51,608	101,161	108,391	124,681	15.0	84	19.0
Terre Haute, Ind.	66,083	62,810	62,693	64,214	2.4	185	12.2
Toledo, Ohio	243,164	290,718	282,349	303,616	7.5	36	38.3
Topeka, Kans.	50,022	64,120	67,833	78,791	16.2	144	12.5
Trenton, N. J.	119,289	123,356	124,697	128,009	2.7	79	7.2
Troy, N. Y.	71,996	72,763	70,304	72,311	2.9	160	9.3
Tulsa, Okla.	72,075	141,258	142,157	182,740	28.5	51	26.7
Union City, N. J.	20,651	58,659	56,173	55,537	-1.1	208	1.3
Utica, N. Y.	94,156	101,740	100,518	101,531	1.0	106	15.8
Waco, Tex.	38,500	52,848	55,982	84,706	51.3	131	26.0
Washington, D. C.	437,571	486,869	663,091	802,178	21.0	9	61.4
Waterbury, Conn.	91,715	99,902	99,314	104,477	5.2	103	27.6
Waterloo, Iowa	36,230	46,191	51,743	65,198	26.0	181	31.3
Wheeling, W. Va.	56,208	61,659	61,099	58,891	-3.6	199	10.4
Wichita, Kans.	72,217	111,110	114,966	168,279	46.4	58	25.7
Wichita Falls, Tex.	40,079	43,690	45,112	68,042	50.8	172	14.1
Wilkes-Barre, Pa.	73,833	86,626	86,236	76,826	-10.9	151	6.9
Wilmington, Del.	110,168	106,597	112,504	110,356	-1.9	94	9.8
Winston-Salem, N. C.	48,395	75,274	79,815	87,811	10.0	127	18.8
Woonsocket, R. I.	49,496	49,376	49,303	50,211	1.8	232	8.6
Worcester, Mass.	179,754	195,311	193,694	203,486	5.1	50	37.0
Yonkers, N. Y.	100,176	134,646	142,598	152,798	7.2	64	17.2
York, Pa.	47,512	55,254	56,712	59,953	5.7	194	4.2
Youngstown, Ohio	132,358	170,002	167,720	168,330	0.4	57	32.8

* Land area as of April 1, 1950. NOTE: Increase in population from census to census includes that due to annexation of territory as well as to direct growth.

Territorial Expansion of the United States

Source: U. S. Bureau of the Census.

Accession	Date	Area, sq. mi. ¹	Area sq. mi. ¹
Virgin Islands of U. S.	1947		133
Trust territory	1947		8,475
Total			605,743
Aggregate, 1950			3,628,130

¹ Total land and water area. ² Leased from Nicaragua for 99 years.

Population of Possessions

Source: U. S. Bureau of the Census.

Accession	Date	Area, sq. mi. ¹
CONTINENTAL UNITED STATES		
Territory in 1790		888,811
Louisiana Purchase	1803	827,192
Florida	1819	58,560
By treaty with Spain	1819	13,443
Texas	1845	390,144
Oregon	1846	285,580
Mexican Cession	1848	529,017
Gadsden Purchase	1853	29,640
Total		3,022,387

OUTLYING TERRITORY

Alaska Territory	1867	586,400
Hawaii Territory	1898	6,461
Puerto Rico	1899	3,435
Guam	1899	206
American Samoa	1900	76
Panama Canal Zone	1904	553
Corn Islands ²	1914	4

Area	1930	1940	1950
United States	122,775,046	131,669,275	150,697,361
Alaska	59,278	72,524	128,643
American Samoa	10,055	12,908	18,937
Canal Zone	39,467	51,827	52,822
Guam	18,509	22,290	59,498
Hawaii	368,336	423,330	499,794
Philippines	13,513,000	16,356,000	
Puerto Rico	1,543,913	1,869,255	2,210,703
Virgin Is. of U. S.	22,012	24,889	26,665
Total	138,349,616	150,502,298	153,694,423

The Working Population of the U. S., 1820-1950

Source: U. S. Bureau of the Census.

Year	Working population		Percent of working population in		Year	Working population		Percent of working population in	
	Number (thousands)	Percent of total population ages 10 and over*	Farm occupation	Nonfarm occupation		Number (thousands)	Percent of total population ages 10 and over*	Farm occupation	Nonfarm occupation
1820.....	2,881	44.4	71.8	28.2	1890.....	23,318	49.2	42.6	57.4
1830.....	3,932	45.5	70.5	29.5	1900.....	29,073	50.2	37.5	62.5
1840.....	5,420	46.6	68.6	31.4	1910.....	37,371	52.2	31.0	69.0
1850.....	7,697	46.8	63.7	36.3	1920.....	42,434	51.3	27.0	73.0
1860.....	10,533	47.0	58.9	41.1	1930.....	48,830	49.5	21.4	78.6
1870.....	12,925	44.4	53.0	47.0	1940.....	52,789	52.2	16.1	83.9
1880.....	17,392	47.3	49.4	50.6	1950.....	60,054	53.5	11.6	88.4

* For 1820 to 1930, the data relate to the population and gainful workers at ages 10 and over. For 1940 and 1950, the data relate to the population and labor force at ages 14 and over; the farm and nonfarm percentages relate only to the experienced labor force.

Experienced Civilian Labor Force, 1950 in Thousands

Source: U. S. Department of Commerce.

Total, 14 years & over.....	58,999	Farmers & farm managers.....	4,321
Professional, technical & kindred workers.....	4,988	Managers, officials & proprietors, excl. farm.....	5,076
Accountants & auditors.....	383	Clerical & kindred workers.....	7,070
Actors & actresses.....	18	Bookkeepers.....	736
Airplane pilots & navigators.....	14	Cashiers.....	234
Architects.....	25	Stenographers, typists & secretaries.....	1,622
Artists & art teachers.....	81	Sales workers.....	4,044
Authors, editors & reporters.....	108	Insurance agents & brokers.....	307
Chemists.....	76	Sales & sales clerks.....	3,407
Chiropractors.....	13	Craftsmen, foremen & kindred workers.....	8,153
Clergymen.....	168	Carpenters.....	985
College presidents, professors, instructors.....	126	Electricians.....	324
Dancers & dancing teachers.....	17	Foremen, not elsewhere classified.....	854
Dentists.....	75	Machinists.....	534
Draftsmen.....	125	Mechanics & repairmen.....	1,768
Engineers, technical.....	534	Painters, construction & maintenance.....	431
Lawyers & judges.....	181	Operators & kindred workers.....	11,715
Librarians.....	56	Private household workers.....	1,488
Musicians & music teachers.....	161	Service workers, except private household.....	4,512
Nurses, professional.....	404	Barbers, beauticians & machinists.....	389
Optometrists.....	15	Bartenders.....	208
Osteopaths.....	5	Boarding & lodging house keepers.....	29
Pharmacists.....	89	Charwomen & cleaners.....	124
Photographers.....	55	Cooks, except private household.....	463
Physicians & surgeons.....	192	Elevator operators.....	94
Radio operators.....	16	Practical nurses.....	144
Religious workers.....	42	Waiters & waitresses.....	713
Social & welfare workers, except group.....	76	Farm laborers & foremen.....	2,515
Surveyors.....	28	Laborers, except farm & mine.....	3,751
Veterinarians.....	13	Occupation not reported.....	1,366

Indian Population Residing on Reservations Under Agency Control

(Top 16 agencies by population, 1950)

Source: Bureau of Indian Affairs.

Five Civilized Tribes Agency (Okla.).....	37,382	Pima Agency (Ariz.).....	5,918
Navajo Agency & Reservation (Ariz.).....	32,838	Rosebud Agency (S. Dak.).....	5,698
Navajo Agency & Reservation (N. Mex.).....	20,714	Turtle Mountain Agency (N. Dak.).....	4,546
Southern Plains Agency (Okla.).....	14,841	Papago Agency (Ariz.).....	4,468
United Pueblo Agency (N. Mex.).....	12,935	Hope Agency & Reservation (Ariz.).....	4,011
California Agency (Calif.).....	10,000	Great Lakes Agency (Wis.).....	3,916
Pine Ridge Agency & Reservation (S. Dak.).....	6,636	Blackfeet Agency & Reservation (Mont.).....	3,546
Consolidated Chippewa Agency (Minn.).....	6,376	San Carlos Agency & Reservation (Ariz.).....	3,136

Women in the Working Population of the U. S., 1870-1950

Source: U. S. Bureau of the Census.

Year	Working women*		
	Number (thousands)	Percent of female population ages 10 and over*	Percent of total working population ages 10 and over*
1870.....	1,917	13.3	14.8
1880.....	2,647	14.7	15.2
1890.....	4,006	17.4	17.2
1900.....	5,319	18.8	18.3
1910.....	7,445	21.5	19.9
1920.....	8,637	21.4	20.4
1930.....	10,752	22.0	22.0
1940.....	12,845	25.4	24.3
1950.....	16,501	28.9	27.5

* For 1870 to 1930, the data relate to the population and gainful workers at ages 10 and over; for 1940 and 1950, the data relate to the population and labor force at ages 14 and over.

Percent Unemployed in the Civilian Labor Force, 1929-56

Source: U. S. Bureau of the Census.

Year	Percent unemployed	Year	Percent unemployed
1929.....	3.2	1942.....	4.7
1930.....	8.7	1943.....	1.9
1931.....	15.9	1944.....	1.2
1932.....	23.6	1946.....	3.9
1933.....	24.9	1947.....	3.6
1934.....	21.7	1948.....	3.4
1935.....	20.1	1949.....	5.5
1936.....	16.9	1950.....	5.0
1937.....	14.3	1951.....	3.0
1938.....	19.0	1952.....	2.7
1939.....	17.2	1953.....	2.5
1940.....	14.6	1954.....	5.0
1941.....	9.9	1955.....	4.0
		1956.....	3.8

NOTE: These estimates are derived from sample surveys and are subject to sampling variations.

MARRIAGE AND DIVORCE

Marriages and Divorces in the United States, 1890-1956

Source: U. S. Public Health Service.

Year	Marriage		Divorce ²		Year	Marriage		Divorce ²	
	Number	Rate ¹	Number	Rate ¹		Number	Rate ¹	Number	Rate ¹
1890.....	570,000	9.0	33,461	.5	1930.....	1,126,856	9.2	195,961	1.6
1895.....	620,000	8.9	40,387	.6	1931.....	1,060,914	8.6	188,003	1.5
1900.....	709,000	9.3	55,751	.7	1932.....	981,903	7.9	164,241	1.3
1905.....	842,000	10.0	67,976	.8	1933.....	1,098,000	8.7	165,000	1.3
1906.....	895,000	10.5	72,062	.8	1934.....	1,302,000	10.3	204,000	1.6
1907.....	936,936	10.8	76,571	.9	1935.....	1,327,000	10.4	218,000	1.7
1908.....	857,461	9.7	76,852	.9	1936.....	1,369,000	10.7	236,000	1.8
1909.....	897,354	9.9	79,671	.9	1937.....	1,451,296	11.3	249,000	1.9
1910.....	948,166	10.3	83,045	.9	1938.....	1,330,780	10.3	244,000	1.9
1911.....	955,287	10.2	89,219	1.0	1939.....	1,403,633	10.7	251,000	1.9
1912.....	1,004,602	10.5	94,318	1.0	1940.....	1,595,879	12.1	264,000	2.0
1913.....	1,021,398	10.5	91,307	.9	1941.....	1,695,999	12.7	293,000	2.2
1914.....	1,025,092	10.3	100,584	1.0	1942.....	1,772,132	13.2	321,000	2.4
1915.....	1,007,595	10.0	104,298	1.0	1943.....	1,577,050	11.7	359,000	2.6
1916.....	1,075,775	10.6	114,000	1.1	1944.....	1,452,394	10.9	400,000	2.9
1917.....	1,144,200	11.1	121,564	1.2	1945.....	1,612,992	12.2	485,000	3.5
1918.....	1,000,109	9.7	116,254	1.1	1946.....	2,291,045	16.4	610,000	4.3
1919.....	1,150,186	11.0	141,527	1.3	1947.....	1,991,878	13.9	483,000	3.4
1920.....	1,274,476	12.0	170,505	1.6	1948.....	1,811,155	12.4	408,000	2.8
1921.....	1,163,863	10.7	159,580	1.5	1949.....	1,579,798	10.6	397,000	2.7
1922.....	1,134,151	10.3	148,815	1.4	1950.....	1,667,231	11.1	385,144	2.6
1923.....	1,229,784	11.0	165,096	1.5	1951.....	1,594,694	10.4	381,000	2.5
1924.....	1,184,574	10.4	170,952	1.5	1952.....	1,539,318	9.9	392,000	2.5
1925.....	1,188,334	10.3	175,449	1.5	1953.....	1,546,000	9.8	390,000	2.5
1926.....	1,202,574	10.2	184,678	1.6	1954.....	1,490,000	9.2	379,000	2.4
1927.....	1,201,053	10.1	196,292	1.6	1955.....	1,531,000	9.3	377,000	2.3
1928.....	1,182,497	9.8	200,176	1.7	1956.....	1,569,000 ³	9.4	377,000 ³	2.3
1929.....	1,232,559	10.1	205,876	1.7					

¹ Per 1,000 population. Divorce rates for 1917-19 and 1941-46 are based on population including armed forces overseas; for 1940 and 1947-52, on population excluding armed forces overseas. Marriage rates for 1917-19 and 1940-52 are based on population excluding armed forces overseas. ² Includes annulments. ³ Provisional. NOTE: Figures for marriages for all years include partial or complete estimates for some states; figures for divorces are estimated, except for 1900, 1905, 1922-32 and 1950.

Marital Status of the Population, 1950

Source: U. S. Bureau of the Census.

State and Census division	Males				Females			
	Population 14 yrs. old & over	% distribution*			Population 14 yrs. old & over	% distribution*		
		Single	Married	Widowed or divorced		Single	Married	Widowed or divorced
Alabama.....	1,024,915	26.03	69.10	4.87	1,093,798	19.51	66.21	14.28
Arizona.....	263,546	25.84	67.38	6.78	259,511	18.36	68.05	13.59
Arkansas.....	659,656	24.09	69.76	6.15	675,397	16.84	68.74	14.45
California.....	4,034,180	24.37	68.25	7.38	4,073,341	15.88	67.00	17.12
Colorado.....	489,263	25.76	67.60	6.64	490,550	18.23	67.03	14.74
Connecticut.....	756,080	27.34	66.89	5.77	797,537	23.28	63.74	12.98
Delaware.....	117,542	25.45	68.52	6.03	122,763	20.46	65.96	13.58
D. C.....	301,111	29.58	64.01	6.41	347,872	26.99	56.71	17.30
Florida.....	1,018,121	22.69	70.53	6.78	1,065,169	15.37	67.86	16.77
Georgia.....	1,168,086	26.29	68.86	4.85	1,247,615	18.84	66.03	15.13
Idaho.....	213,170	25.26	68.33	6.41	198,781	16.10	72.69	11.21
Illinois.....	3,309,125	25.56	67.73	6.71	3,418,775	19.74	65.57	14.69
Indiana.....	1,448,831	23.12	70.03	6.85	1,486,515	17.53	68.10	14.37
Iowa.....	968,920	25.55	68.17	6.28	985,169	19.54	66.95	13.51
Kansas.....	712,198	24.44	69.26	6.30	720,732	17.72	68.10	14.18
Kentucky.....	1,039,654	27.16	66.95	5.89	1,048,459	19.96	66.32	13.72
Louisiana.....	914,015	25.86	68.93	5.21	968,553	19.14	66.43	14.43
Maine.....	331,780	27.03	65.50	7.47	342,686	21.67	63.57	14.76
Maryland.....	863,852	26.31	68.01	5.68	884,036	20.09	66.40	13.51
Massachusetts.....	1,733,192	29.58	64.04	6.38	1,905,814	27.01	58.64	14.35
Michigan.....	2,368,024	25.13	68.41	6.46	2,349,955	18.74	68.55	12.71
Minnesota.....	1,101,812	29.56	64.79	5.65	1,099,128	22.73	64.85	12.42
Mississippi.....	723,522	26.45	68.55	5.00	757,568	18.71	67.27	14.02
Missouri.....	1,466,440	23.74	69.24	7.02	1,556,891	18.64	65.64	15.72
Montana.....	227,271	28.98	63.45	7.57	202,470	17.13	69.98	12.89
Nebraska.....	498,732	26.94	67.02	6.04	497,059	19.87	67.05	13.08
Nevada.....	64,807	25.18	65.45	9.37	55,791	12.94	72.64	14.42
New Hampshire.....	197,099	26.90	65.67	7.43	207,945	22.53	62.57	14.90
New Jersey.....	1,838,965	26.34	68.08	5.58	1,931,114	21.35	65.19	13.46
New Mexico.....	233,244	28.32	66.09	5.59	223,050	20.16	68.56	11.28
New York.....	5,616,963	27.59	66.79	5.62	6,033,574	23.15	62.89	13.96
North Carolina.....	1,390,072	29.44	66.62	3.94	1,435,312	22.54	65.39	12.07
North Dakota.....	230,502	34.70	60.51	4.79	207,649	23.10	66.68	10.22
Ohio.....	2,935,808	23.52	69.45	7.03	3,060,868	19.07	66.48	14.45
Oklahoma.....	808,460	23.87	69.51	6.62	822,794	16.13	68.34	15.53
Oregon.....	576,808	22.86	69.60	7.54	561,087	15.14	70.82	14.04
Pennsylvania.....	3,904,893	27.64	66.18	6.18	4,108,599	23.29	63.38	13.33
Rhode Island.....	300,768	30.12	63.87	6.01	319,531	25.40	60.99	13.61
South Carolina.....	688,217	29.53	66.67	3.80	733,249	22.57	64.13	13.30
South Dakota.....	245,727	31.27	63.33	5.40	227,366	20.86	67.86	11.27
Tennessee.....	1,149,299	25.45	69.04	5.51	1,209,638	19.31	66.11	14.58
Texas.....	2,781,613	24.78	69.34	5.88	2,801,565	16.79	68.60	14.61
Utah.....	235,325	25.81	69.31	4.88	234,486	19.12	69.31	11.57
Vermont.....	136,311	28.62	64.42	6.96	141,356	22.89	62.23	14.88
Virginia.....	1,210,799	29.79	65.22	4.99	1,193,627	21.18	65.46	13.36
Washington.....	919,661	25.93	66.57	7.50	862,214	15.44	70.03	14.53
West Virginia.....	700,823	27.29	67.08	5.63	704,919	20.98	66.56	12.46
Wisconsin.....	1,278,770	27.97	65.84	6.19	1,279,013	21.77	65.72	12.51
Wyoming.....	113,645	28.98	64.35	6.67	96,526	15.52	73.30	11.18
New England.....	3,455,230	28.70	64.89	6.41	3,709,869	25.17	60.75	14.08
Middle Atlantic.....	11,360,821	27.40	66.79	5.81	12,073,287	22.91	63.43	13.66
East North Central.....	11,340,558	24.90	68.40	6.70	11,595,126	19.30	66.76	13.94
West North Central.....	5,224,331	26.54	67.23	6.23	5,293,994	19.92	66.32	13.76
South Atlantic.....	7,458,623	27.46	67.42	5.12	7,734,562	20.45	65.57	13.98
East South Central.....	3,937,390	26.23	68.42	5.35	4,109,463	19.42	66.40	14.18
West South Central.....	5,163,744	24.73	69.36	5.91	5,268,309	17.12	68.18	14.70
Mountain.....	1,840,271	26.62	66.89	6.49	1,761,165	17.93	69.17	12.90
Pacific.....	5,530,649	24.47	68.11	7.42	5,496,642	15.73	67.87	16.40
TOTAL U. S.....	55,311,617	26.25	67.62	6.13	57,042,417	20.08	65.75	14.17

* Total for ages 14 and over = 100%.

Marriage Information, by State

Sources: Information Please Almanac questionnaires to states; and U. S. Public Health Service.

State	Legal minimum marriage age				Waiting period		- Marriages ¹	
	With parental consent		Without parental consent		Blood test required	Before license	After license	
	M	F	M	F				
Alabama.....	17	14	21	18	yes	none	none	19,791
Arizona.....	18	16	21	18	yes	none	none	21,831
Arkansas.....	18	16	21	18	yes	3 da.	none	14,888 ¹⁸
California.....	18 ⁴	16 ⁴	21	18	yes	none	none	81,939
Colorado.....	16	16	21	18	yes	none	none	12,647 ¹⁷
Connecticut.....	16	16	21	21	yes	4 da.	none	17,534
Delaware.....	18	16	21	18	yes	none	24 hr. ⁵	2,232
D. C.....	18	16	21	18	no	3 da.	none	8,031 ¹⁷
Florida.....	18	16	21	21	yes	3 da.	none	29,904
Georgia.....	17	14	21	21	yes	5 da.	none	54,780
Idaho.....	15	15 ⁴	18	18	yes	none	none	8,879
Illinois.....	18	16	21	18	yes	none	none	82,877 ¹⁷
Indiana.....	18	16	21	18	yes	none	none	66,963 ¹⁶
Iowa.....	16	14	21	18	yes	none	none	24,493
Kansas.....	18	16	21	18	yes	3 da.	none	17,667
Kentucky.....	18	14	21	21	yes	3 da.	none	21,884 ¹⁷
Louisiana.....	18 ⁴	16 ⁴	21 ³	21 ³	yes	none	72 hr. ⁷	21,300 ¹⁶
Maine.....	16	16	21	18	yes	5 da.	none	8,263
Maryland.....	18	16	21	18	no	48 hr.	none	42,743
Massachusetts.....	18	16	21	18	yes	5 da.	none	37,079 ¹⁶
Michigan.....	18	16 ¹³	18	18	yes	5 da.	none	55,698
Minnesota.....	16	15	18	16	no	5 da.	none	23,700
Mississippi.....	14	12	21	18	no	none	none	66,423
Missouri.....	15 ⁶	15 ⁴	21	18	yes	3 da.	none	34,162 ¹⁸
Montana.....	18	16	21	18	yes	none	none	6,514
Nebraska.....	18	16	21	21	yes	none	none	11,892
Nevada.....	18	16	21	18	no	none	none	52,420 ¹⁷
New Hampshire.....	14	13	20	18	yes	5 da.	none	7,061
New Jersey.....	18 ¹⁵	16 ¹⁵	21	18	yes	72 hr.	none	40,327
New Mexico.....	18	16	21	18	yes	none	none	22,300 ¹⁶
New York.....	16	14 ¹⁰	21	18	yes	none	(11)	123,251
North Carolina.....	16	16	18	18	yes	none ⁸	none	26,118 ¹⁷
North Dakota.....	18	15	21	18	yes	none	none	4,241
Ohio.....	18	16	21	21	yes	5 da.	none	61,862
Oklahoma.....	18	15	21	18	yes	none	none	27,290 ¹⁸
Oregon.....	18	15	21	18	yes	3 da.	none	10,632
Pennsylvania.....	16 ¹²	16 ¹²	21	21	yes	3 da.	none	77,543
Rhode Island.....	18	16	21	21	yes	3 da.	none	6,357
South Carolina.....	18	14	18	18	no	24 hr.	none	48,227
South Dakota.....	18	15	21	18	yes	none	none	6,122
Tennessee.....	16	16	21	21	yes	3 da. ⁹	none	23,258
Texas.....	16	14	21	18	yes	none	none	91,210 ¹⁸
Utah.....	16	14	21	18	yes	none	none	6,724
Vermont.....	18	16	21	18	yes	none	5 da.	3,378
Virginia.....	18	16	21	21	yes	none	none	36,849
Washington.....	15	15	21	18	no	3 da.	none	29,382 ²
West Virginia.....	18	16	21	21	yes	3 da.	none	14,339
Wisconsin.....	18 ¹⁴	15	21	18	yes	5 da.	none	25,543
Wyoming.....	18	16	21	21	yes	none	none	3,030

¹ By place of occurrence. ² Provisional figures. Data represent marriages reported for 22 states, marriage intentions filed for 1 state, and marriage licenses issued for remaining states. ³ Marriages, otherwise valid, between persons below minimum ages (who have reached puberty) will be legal. ⁴ Males under 18 and females under 16 may be married with consent of parents, provided Superior Court gives its permission. ⁵ 96 hr. if nonresidents. ⁶ If under 15, order must be obtained from Circuit or Probate Court. ⁷ Unless certificate signed by district judge is procured. ⁸ Except in Pamlico County, 48 hr. ⁹ Except by court order or known by judge to be over 21. ¹⁰ Females 14-16 years old must have consent of Judge of Children's Court. ¹¹ Marriage may not be solemnized within 3 days from date on which specimen was taken for serological test, and not until 24 hr. after issuance of marriage license. ¹² Or date on which specimen was taken for serological test, and not until 24 hr. after issuance of marriage license. ¹³ Consent of 1 parent or guardian phans' Court may approve issuance of license to one younger than 16 years. ¹⁴ Consent of 1 parent or guardian phans' Court may approve issuance of license to one younger than 16 years. ¹⁵ If male is under 18 or female under 16, consent required must be approved in writing by any judge of the county court or of the county court of juvenile and domestic relations. ¹⁶ Estimated. ¹⁷ Marriage licenses. ¹⁸ Incomplete.

Divorce Information, by State

Sources: Information Please Almanac questionnaires to states; and U. S. Public Health Service.

State	Residence for divorce	Period before parties may remarry		Divorces ¹	
		Plaintiff	Defendant	1954 ²	1955 ²
Alabama.....	1 yr. ²²	60 da. ³	60 da. ³	8,916	9,721
Arizona.....	1 yr.	1 yr.	1 yr.	4,790 ⁷	3,526
Arkansas.....	90 da.	none	none	7,917 ⁵	5,113 ⁵
California.....	1 yr. ²¹	1 yr.	1 yr.	42,093	41,599
Colorado.....	1 yr.	6 mo.	6 mo.	4,300 ⁷	4,900 ⁷
Connecticut.....	3 yr.	none	none	2,876	2,705
Delaware.....	2 yr.	none	none	655	509
D. C.....	1 yr. ⁴	6 mo.	6 mo.	1,140	1,085
Florida.....	6 mo.	none	none	19,387	19,999
Georgia.....	1 yr.	30 da.	30 da.	7,041 ⁵	7,547 ⁵
Idaho.....	6 wk.	none	none	2,523	2,414
Illinois.....	1 yr.	none	none	.....	.....
Indiana.....	1 yr.	none	none	11,856 ⁷	11,317 ⁷
Iowa.....	1 yr.	1 yr. ¹⁸	1 yr. ¹⁸	5,217	5,195
Kansas.....	1 yr.	6 mo.	6 mo.	5,324	5,101
Kentucky.....	1 yr.	none	none	.....	.....
Louisiana.....	1 yr.	none ⁴	none ⁴	.....	.....
Maine.....	6 mo.	none	none	2,093	1,960
Maryland.....	1 yr.	none	none	5,111	5,422
Massachusetts.....	5 yr.	6 mo.	2 yr.	5,835 ⁷	5,892 ⁷
Michigan.....	1 yr.	none	(¹)	16,281 ⁵	17,676 ⁵
Minnesota.....	1 yr.	6 mo.	6 mo.	4,029	3,804
Mississippi.....	1 yr.	(¹⁸)	(¹⁸)	5,001	4,845
Missouri.....	1 yr.	none	none	11,705 ⁵	11,351 ⁵
Montana.....	1 yr.	none	none	1,966	1,909
Nebraska.....	1 yr.	6 mo.	6 mo.	2,427	2,424
Nevada.....	6 wk.	none	none	9,502	9,559
New Hampshire.....	1 yr.	none	none	1,067	1,076
New Jersey.....	2 yr.	none ²³	none ²³	4,609	4,844
New Mexico.....	1 yr. ³⁰	none	none	2,500 ⁷	2,140 ⁷
New York.....	(¹¹)	none	3 yr. ¹³	.....	.....
North Carolina.....	2 yr.	none	none	.....	.....
North Dakota.....	1 yr.	(¹)	(¹)	554	543
Ohio.....	1 yr.	none	none	21,665	22,259
Oklahoma.....	1 yr.	6 mo.	6 mo.	12,846 ⁷	12,521 ⁵
Oregon.....	1 yr.	6 mo.	6 mo.	6,130	6,158
Pennsylvania.....	1 yr.	none	none	11,698	11,160
Rhode Island.....	2 yr.	none	none	.....	827
South Carolina.....	1 yr.	none	none	2,425 ⁵	3,055 ⁵
South Dakota.....	1 yr.	none	none ¹⁴	954	868
Tennessee.....	2 yr.	none	none ¹³	7,866	8,342
Texas.....	1 yr.	1 yr. ¹⁹	1 yr. ¹⁹	36,000 ⁵	34,921 ⁵
Utah.....	3 mo.	3 mo. ²²	3 mo. ²²	2,140	2,060
Vermont.....	1 yr.	none	2 yr. ¹⁵	542	533
Virginia.....	1 yr.	4 mo.	4 mo.	7,262	7,116
Washington.....	1 yr.	none	none	8,321 ⁷	8,787 ⁷
West Virginia.....	1 yr. ¹⁶	60 da. ¹⁷	60 da. ¹⁷	.....	.....
Wisconsin.....	2 yr.	1 yr.	1 yr.	4,887	4,720
Wyoming.....	60 da.	none	none	1,185 ⁵	1,127

¹ Include reported annulments. ² Leaders (...) indicate data unavailable. ³ Divorced persons may remarry each other at any time. ⁴ At discretion of court. ⁵ Incomplete. ⁶ 2 yr. if cause for divorce occurred outside D. C. ⁷ Estimated. ⁸ For husband; 10 mo. for wife. In case of adultery, guilty party cannot marry accomplice. ⁹ At discretion of court; or in case of children under 18, 6-mo. waiting period. ¹⁰ Until court is adjourned that grants the divorce. Court may prohibit defendant in adultery cases from remarrying. ¹¹ Action for divorce may be maintained where: (1) both parties were residents of state when offense was committed; (2) parties were married within state; (3) plaintiff was resident of state when offense was committed and is resident when action is commenced; (4) offense was committed within state and injured party is resident of state when action is commenced. ¹² By modification of decree by court. ¹³ Party guilty of adultery may never marry the correspondent. ¹⁴ In case of adultery, guilty party may not marry, except to innocent party, until death of innocent party. ¹⁵ Period may be shortened by court. ¹⁶ 2 years if residence is acquired after cause of divorce action arose. No residence required in case of adultery if personal service can be had within state. ¹⁷ Attorney can lengthen waiting period if desired. ¹⁸ Unless otherwise set out by judge. ¹⁹ For cruelty only, but technically not usually observed. ²⁰ Servicemen acquire residence by being continuously stationed at military base in state for 1 year. ²¹ Must have resided in county for 3 mo. ²² 3-mo. period between first and final judgment; in Utah, 90 days between first and final judgment, during which parties must consult counseling services. ²³ If complainant is a resident, and defendant is non-resident but within jurisdiction of court, no specific residence period is required.

Grounds for Divorce

Source: Information Please Almanac questionnaires to the states.

State	Adultery	Cruelty	Desertion	Alcoholism	Impotence	Felony conviction	Neglect to provide	Insanity	Pregnancy at marriage ¹	Bigamy	Separation	Indignities	Drug addiction ²	Violence	Fraudulent contract	Others
Alabama.....	yes	yes	yes ²	yes	...	yes ⁵⁰	yes ¹	yes ⁴	yes	...	...	...	yes	yes	...	(5)
Arizona.....	yes	yes	yes	yes	yes	yes ⁶	yes	...	yes	yes	yes ⁴	yes	yes	yes	yes	(5, 7-12)
Arkansas.....	yes	yes	yes ²	yes	yes	yes	yes	...	...	yes	yes ¹⁴	yes	yes	yes	yes	(12, 15, 16)
California.....	yes	yes ⁵¹	yes	yes ⁵³	yes	yes	yes ⁵³	yes ¹⁴	...	yes	...	yes	...	yes	yes	...
Colorado.....	yes	yes	yes ³	yes	yes	yes	yes	yes ⁴	...	yes	yes ²	...	yes	yes	...	(7)
Connecticut.....	yes	yes	yes ¹⁴	yes	...	yes ¹⁸	...	yes ⁴	...	...	...	...	...	...	yes	(10, 17, 18)
Delaware.....	yes	yes	yes ³	yes ³	...	yes ²⁰	yes	yes ⁴	...	yes	...	...	...	...	...	(21-23, 26)
D. C.....	yes	...	yes ³	...	...	yes	...	...	...	...	yes ⁴	...	...	...	...	...
Florida.....	yes	yes	yes ²	...	yes	...	...	...	...	yes	...	...	...	...	...	(12, 17, 24, 47)
Georgia.....	yes	yes	yes ²	yes	yes	yes ²⁰	...	yes	yes	...	...	...	...	...	yes	(12, 16)
Idaho.....	yes	yes	yes	...	...	...	yes	yes ¹⁴	...	yes	...	...	...	...	...	(17, 51)
Illinois.....	yes	yes	yes ²	yes ³	yes	yes	...	...	...	yes	...	...	...	...	...	(10, 26, 27)
Indiana.....	yes	yes	yes ³	yes	yes	...	yes ³	yes ⁴	...	...	...	...	...	...	...	(10)
Iowa.....	yes	yes	yes ²	yes	...	yes	...	...	...	...	...	...	...	...	...	...
Kansas.....	yes	yes	yes ²	yes	yes	yes	...	yes ⁴	yes	yes	...	...	...	...	yes	(12, 16)
Kentucky.....	yes	yes	yes	yes	yes	yes	...	yes ⁴	yes	...	yes ⁴	...	...	yes	yes	(11, 28, 32)
Louisiana.....	yes	yes	yes	yes	...	yes	yes	...	...	...	yes ³	...	...	...	...	(26, 30)
Maine.....	yes	yes	yes	yes	yes	yes ¹⁸	yes	...	...	yes	...	yes	yes	...	...	(18)
Maryland.....	yes	yes	yes ²¹	...	yes ⁴⁵	...	yes ¹⁴	...	...	...	yes ¹⁴	...	...	...	...	(23)
Massachusetts.....	yes	yes	yes ¹⁵	yes	yes	yes ²⁴	yes	...	...	...	...	yes	...	...	...	(24)
Michigan.....	yes	yes	yes ³	yes	yes	yes ²⁵	yes	yes	...	...	...	...	...	...	...	...
Minnesota.....	yes	yes	yes ²	yes ²	yes	yes	...	yes ⁴	...	...	yes ³	...	...	...	...	...
Mississippi.....	yes	yes	yes	yes	yes	yes	...	yes ¹⁵	yes	yes	yes ²	...	yes	yes	...	(7, 12, 18)
Missouri.....	yes	yes	yes	yes	yes	yes	...	...	yes	yes	...	yes	...	...	...	(7-10)
Montana.....	yes	yes	yes	...	...	yes	yes	yes	...	...	...	...	...	...	...	(17)
Nebraska.....	yes	yes	yes	yes	yes	yes ³⁵	yes	yes ⁴	...	...	...	...	...	...	...	(10, 26)
Nevada.....	yes	yes	yes ²	yes	yes	yes	yes	yes ¹	...	...	...	...	...	...	...	(16, 28, 35)
New Hampshire.....	yes	yes	yes ¹⁴	yes ¹⁴	yes	yes ⁶	yes ¹⁴	...	...	...	...	...	...	yes	...	...
New Jersey.....	yes	yes	yes ³	...	...	...	...	...	...	...	...	...	...	...	...	(42)
New Mexico.....	yes	yes	yes	yes	yes	yes	yes	yes	yes	...	...	...	...	...	...	...
New York.....	yes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina.....	yes	...	...	...	yes	...	...	yes ³⁷	yes	...	yes ⁴	...	...	...	...	(5)
North Dakota.....	yes	yes	yes ²	yes ¹	...	yes	yes ²	yes ⁴	...	...	...	...	yes ¹	...	...	...
Ohio.....	yes	yes	...	yes ¹⁴	yes	yes	...	...	yes	...	...	...	...	yes	...	(15, 24, 30)
Oklahoma.....	yes	yes	yes ²	yes	yes	yes	...	yes ⁴	yes	...	...	...	...	yes	...	(24, 29, 49)
Oregon.....	yes	yes	yes ²	yes ²³	yes	yes	...	yes ¹⁴	...	...	...	yes	...	...	...	...
Pennsylvania.....	yes	yes	yes ³	...	yes ⁴⁵	yes ³⁰	...	...	yes	...	yes	yes	...	...	...	(12)
Rhode Island.....	yes	yes	yes ⁴	yes	yes	...	yes ²	yes ¹⁵	...	yes	...	yes	yes	yes	yes	(40)
South Carolina.....	yes	yes	yes ²	yes	...	...	...	...	...	...	...	...	...	...	...	...
South Dakota.....	yes	yes ²	yes ²	...	...	yes	yes ²	yes ²	...	...	...	...	...	...	...	(7)
Tennessee.....	yes	yes	yes ³	yes	yes	yes	yes	...	yes	yes	...	...	...	...	...	(10, 26, 41, 45)
Texas.....	yes	yes	yes ¹⁴	...	...	yes ⁶	...	yes ⁴	...	...	yes ⁵²	yes	...	yes	...	...
Utah.....	yes	yes	yes	yes	yes	yes	yes	...	...	...	yes ¹⁴	...	...	...	...	...
Vermont.....	yes	yes	yes ¹⁴	...	...	yes ³⁵	yes	yes ⁴	...	...	yes ¹⁴	...	...	...	...	(19)
Virginia.....	yes	...	yes ²	...	yes	yes	...	...	yes	...	...	...	...	...	...	(5, 13, 45, 46)
Washington.....	yes	yes	yes ²	yes	yes	yes	yes	yes ⁴	...	...	yes ⁴	yes	...	...	yes	...
West Virginia.....	yes	yes	yes ³	yes	...	yes	...	...	...	...	...	...	yes	...	...	...
Wisconsin.....	yes	yes	yes ²	yes	yes	yes ¹⁵	...	...	...	...	yes ⁴	...	...	...	...	(44)
Wyoming.....	yes	yes	yes ²	yes	yes	yes	yes ¹	yes ³	yes	...	yes ³	yes	...	...	...	(8, 9, 48)

¹ If unknown to husband. ² 1 year. ³ 2 years. ⁴ 5 years. ⁵ Crime against nature. ⁶ With imprisonment of 1 year. ⁷ Absence of 1 year. ⁸ Felony before marriage. ⁹ Husband a vagrant. ¹⁰ Infamous crime. ¹¹ Loathsome disease. ¹² Relationship within prohibited degree. ¹³ Wife a prostitute. ¹⁴ 3 years. ¹⁵ Absence of 3 years. ¹⁶ Insanity at time of marriage. ¹⁷ Habitual intemperance. ¹⁸ With imprisonment for life. ¹⁹ Absence of 7 years. ²⁰ With imprisonment of 2 years. ²¹ Wife under 18 at time of marriage. ²² Husband under 18 at time of marriage. ²³ Feeble-mindedness or epilepsy for 5 years. ²⁴ Defendant obtained divorce from plaintiff in any other state or country. ²⁵ Absence. ²⁶ Attempt by one party on life of other. ²⁷ Infected other party with communicable venereal disease. ²⁸ Joining a religious cult disbelieving in marriage. ²⁹ Unchaste behavior of wife after marriage. ³⁰ Public defecation. ³¹ 18 months. ³² With imprisonment of 3 years. ³³ 18 months of which have been served. ³⁴ Excessively vicious conduct; any cause which, by laws of state, renders marriage null and void at its inception. ³⁵ With imprisonment of 5 years. ³⁶ With imprisonment of 3 years. ³⁷ Noncohabitation for 3 years. ³⁸ 10 years. ³⁹ 1 year, if contracted after marriage. ⁴⁰ Gross neglect of duty. ⁴¹ Any other gross misbehaviour or wickedness. ⁴² Absence of 2 years. ⁴³ Infamous crime before marriage. ⁴⁴ Fugitive from justice and absent for 2 years. ⁴⁵ Absence of 5 years. ⁴⁶ If at time of marriage and incurable. ⁴⁷ Indignities. ⁴⁸ Ungovernable temper. ⁴⁹ Noncohabitation for 2 years. ⁵⁰ Incompatibility. ⁵¹ Imprisonment for 2 years, sentence being for 7 years or more. ⁵² Noncohabitation for 5 years. ⁵³ 7 years. ⁵⁴ 1 year.

Percent of Population Ever Married: U. S., 1890-1956

Source: U. S. Bureau of the Census.

Age group, years	1890	1900	1910	1920	1930	1940	1950	1956
Males								
14-19.....	0.4	0.9	1.0	1.8	1.5	1.5	2.9	2.4
20-24.....	19.2	22.1	24.6	29.0	28.9	27.8	41.0	50.8
25-29.....	53.8	54.0	56.9	60.3	63.1	64.0	76.2	76.7
30-34.....	73.3	72.2	73.7	75.7	78.7	79.3	86.8	85.2
35-44.....	84.5	82.9	83.1	83.7	85.6	86.0	90.4	90.9
45-54.....	90.7	89.6	88.7	87.8	88.5	88.9	91.5	91.2
Females								
14-19.....	8.0	9.4	9.7	10.8	10.9	10.0	14.4	15.0
20-24.....	48.1	48.3	51.4	54.3	53.8	52.8	67.7	71.4
25-29.....	74.5	72.4	74.9	76.8	78.2	77.2	86.7	89.1
30-34.....	84.8	83.3	83.8	85.0	86.7	85.3	90.7	93.2
35-44.....	90.1	88.8	88.5	88.6	89.9	89.6	91.7	92.8
45-54.....	92.9	92.1	91.4	90.3	90.8	91.3	92.2	92.2

Marriage Prospects of Single Men and Women

Source: U. S. Bureau of the Census.

Age	Per cent of population single ¹		Per cent who ever marry ²		Age	Per cent of population single ¹		Per cent who ever marry ²	
	Male	Female	Male	Female		Male	Female	Male	Female
15.....	99.1	98.0	92.2	93.5	33.....	11.9	8.3	58.5	42.1
16.....	99.2	94.0	92.4	93.5	34.....	11.0	8.1	54.1	38.0
17.....	98.4	86.4	92.5	93.5	35.....	10.9	9.3	49.7	34.3
18.....	96.1	75.6	92.6	93.3	36.....	10.3	8.1	45.6	31.0
19.....	90.7	62.4	92.7	92.9	37.....	9.7	7.8	41.6	27.9
20.....	82.2	50.0	92.6	92.1	38.....	9.9	8.3	38.1	25.2
21.....	70.2	38.7	92.3	90.8	39.....	8.9	7.5	34.8	22.6
22.....	58.6	30.1	91.8	89.0	40.....	9.9	9.3	31.7	20.2
23.....	47.1	23.9	90.0	86.3	41.....	8.5	7.5	28.8	18.1
24.....	38.4	19.8	89.6	82.8	42.....	8.8	8.1	26.0	16.1
25.....	32.2	16.5	88.0	78.5	43.....	8.2	7.5	23.5	14.4
26.....	27.6	15.0	85.9	73.7	44.....	8.7	7.7	21.2	12.8
27.....	22.7	12.7	83.4	68.9	45.....	9.5	8.9	19.1	11.3
28.....	19.4	11.6	80.3	64.4	50.....	9.6	8.8	11.1	6.1
29.....	16.6	10.4	76.6	59.9	55.....	8.9	8.0	6.2	3.2
30.....	15.9	10.8	72.3	55.3	60.....	9.2	8.6	3.3	1.6
31.....	13.3	9.2	67.5	50.8	65 and over.....	8.3	8.9	1.9	0.8
32.....	13.1	9.2	63.0	46.4					

¹ Per cent single within specified year of age in 1950, in 3½% sample of population. ² Per cent of persons single at beginning of year of age who marry during that year and all later years. NOTE: "Single" means those never married; that is, it excludes widowed and divorced. Hence, "marriage prospects" refers to likelihood of first marriage only.

Median Age at First Marriage in the U. S., 1890-1955

Source: U. S. Bureau of the Census.

Year	Males	Females	Year	Males	Females	Year	Males	Females	Year	Males	Females
1890.....	26.1	22.0	1910.....	25.1	21.6	1930.....	24.3	21.3	1955*.....	22.7	20.2
1900.....	25.9	21.9	1920.....	24.6	21.2	1940.....	24.3	21.5	1956*.....	22.9	20.1

* Provisional.

BIRTHS

Live Births and Birth Rates, 1955-56

Source: U. S. Public Health Service.

State	Number			Rate		
	1955	1956	Per cent change	1955	1956	Per cent change
Alabama.....	81,809	83,721	+2.3	26.3	26.7	+1.5
Arizona.....	28,159	29,925	+6.3	28.0	28.3	+1.1
Arkansas.....	42,186	42,306	+0.3	23.4	23.3	-0.4
California.....	310,862	328,929	+5.8	24.0	24.5	+2.1
Colorado.....	41,009	42,655	+4.0	26.5	26.5	0
Connecticut.....	51,167	52,590	+2.8	23.3	23.6	+1.3
Delaware.....	10,198	11,433	+12.1	26.1	28.4	+8.8
D. C.....	31,248	33,518	+7.3	36.5	38.7	+6.0
Florida.....	89,149	96,967	+8.8	24.9	25.7	+3.2
Georgia.....	101,153	103,328	+2.2	27.6	27.8	+0.7
Idaho.....	16,711	16,427	-1.7	27.3	26.3	-3.7
Illinois.....	216,016	225,327	+4.3	23.2	23.9	+3.0
Indiana.....	108,014	114,383	+5.9	25.0	25.9	+3.6
Iowa.....	64,501	64,070	-0.7	24.1	23.8	-1.2
Kansas.....	50,968	51,817	+1.7	24.7	24.6	-0.4
Kentucky.....	75,030	75,931	+1.2	24.9	25.2	+1.2
Louisiana.....	84,815	88,332	+4.1	28.9	29.4	+1.7
Maine.....	21,747	22,413	+3.1	24.0	24.6	+2.5
Maryland.....	63,540	65,377	+2.9	23.2	23.2	0
Massachusetts.....	110,663	(¹)	....	....	....	....
Michigan.....	194,405	204,291	+5.1	26.5	27.2	+2.6
Minnesota.....	80,170	81,276	+1.4	25.1	25.1	0
Mississippi.....	66,413	65,672	-1.1	31.1	30.9	-0.6
Missouri.....	96,927	97,820	+0.9	23.1	23.0	-0.4
Montana.....	17,202	17,484	+1.6	27.3	27.4	+0.4
Nebraska.....	33,796	33,676	-0.4	24.2	23.8	-1.7
Nevada.....	6,213	6,444	+3.7	26.4	26.1	-1.1
New Hampshire.....	12,355	12,261	-0.8	22.3	21.9	-1.8
New Jersey.....	116,470	118,986	+2.2	21.9	22.0	+0.5
New Mexico.....	25,915	26,499	+2.3	32.7	32.5	-0.6
New York.....	344,683	348,539	+1.1	21.5	21.5	0
North Carolina.....	115,620	116,285	+0.6	26.6	26.3	-1.1
North Dakota.....	17,473	16,693	-4.5	27.2	25.4	-6.6
Ohio.....	221,496	233,864	+5.6	24.8	25.7	+3.6
Oklahoma.....	51,114	52,152	+2.0	23.1	23.3	+0.9
Oregon.....	38,346	37,941	-1.1	22.8	22.1	-3.1
Pennsylvania.....	238,548	247,815	+3.9	21.9	22.6	+3.2
Rhode Island.....	19,175	19,365	+1.0	23.5	23.4	-0.4
South Carolina.....	62,746	63,319	+0.9	27.2	26.9	-1.1
South Dakota.....	18,813	18,280	-2.8	27.5	26.3	-4.4
Tennessee.....	86,724	86,620	-0.1	25.4	25.0	-1.6
Texas.....	237,715	246,265	+3.6	27.2	27.6	+1.5
Utah.....	25,071	25,453	+1.5	31.5	31.3	-0.6
Vermont.....	9,370	8,895	-5.1	25.3	24.0	-5.1
Virginia.....	89,807	92,484	+3.0	25.1	25.3	+0.8
Washington.....	64,682	65,556	+1.4	24.8	24.6	-0.8
West Virginia.....	45,348	45,896	+1.2	22.9	23.1	+0.9
Wisconsin.....	91,837	93,382	+1.7	24.8	24.8	0
Wyoming.....	8,462	8,306	-1.8	27.1	25.9	-4.4

¹ Figure not available. NOTE: Rates are per 1,000 estimated midyear population in each specified area; births are by place of occurrence. Data are provisional.

Live Births in the United States, 1909-1956

Source: U. S. Public Health Service.

Year	Births ¹	Rate ²	Year	Births ¹	Rate ²	Year	Births ¹	Rate ²
1909.....	2,718,000	30.0	1925.....	2,909,000	25.1	1941.....	2,703,000	20.3
1910.....	2,777,000	30.1	1926.....	2,839,000	24.2	1942.....	2,989,000	22.2
1911.....	2,809,000	29.9	1927.....	2,802,000	23.5	1943.....	3,104,000	22.7
1912.....	2,840,000	29.8	1928.....	2,674,000	22.2	1944.....	2,939,000	21.2
1913.....	2,869,000	29.5	1929.....	2,582,000	21.2	1945.....	2,858,000	20.4
1914.....	2,966,000	29.9	1930.....	2,618,000	21.3	1946.....	3,411,000	24.1
1915.....	2,965,000	29.5	1931.....	2,506,000	20.2	1947.....	3,817,000	26.6
1916.....	2,964,000	29.1	1932.....	2,440,000	19.5	1948.....	3,637,000	24.9
1917.....	2,944,000	28.5	1933.....	2,307,000	18.4	1949.....	3,649,000	24.5
1918.....	2,948,000	28.2	1934.....	2,396,000	19.0	1950.....	3,632,000	24.1
1919.....	2,740,000	26.1	1935.....	2,377,000	18.7	1951.....	3,823,000	24.9
1920.....	2,950,000	27.7	1936.....	2,355,000	18.4	1952.....	3,913,000	25.1
1921.....	3,055,000	28.1	1937.....	2,413,000	18.7	1953.....	3,965,000	25.0
1922.....	2,882,000	26.2	1938.....	2,496,000	19.2	1954.....	4,078,000	25.3
1923.....	2,910,000	26.0	1939.....	2,466,000	18.8	1955.....	4,104,000	25.0
1924.....	2,979,000	26.1	1940.....	2,559,000	19.4	1956 ³	4,220,000	25.2

¹ Adjusted for underregistration and for births in states not in the birth registration area from 1915 to 1932; estimates for earlier years are based upon data for a few states. ² Rates are per 1,000 population estimated as of July 1 for each year except 1940 and 1950, which are as of April, the census date; for 1941-46 based on population including armed forces overseas. ³ Provisional.

Live Births by Order of Birth, 1940-55

Source: U. S. Public Health Service.

Year & race	Total	Birth Order						
		1st	2nd	3rd	4th	5th	6th & 7th	8th & over
1940.....	2,558,647	940,116	639,236	349,941	205,443	131,099	154,138	138,674
1944.....	2,938,891	1,000,770	788,293	456,537	251,604	148,554	160,712	132,421
1945.....	2,858,449	961,456	763,494	445,705	248,607	148,251	159,100	131,836
1946.....	3,410,738	1,290,703	934,676	486,813	262,213	151,030	158,035	127,268
1947.....	3,816,770	1,574,001	1,018,873	523,722	266,976	151,703	156,269	125,226
1948.....	3,636,627	1,343,056	1,047,097	545,131	271,888	152,191	155,567	121,697
1949.....	3,648,867	1,234,963	1,092,658	584,175	292,951	158,496	160,328	125,296
1950.....	3,631,512	1,140,398	1,096,716	630,102	314,067	165,808	162,039	122,382
1951 ¹	3,822,961	1,195,333	1,116,358	685,721	351,234	180,341	170,285	123,689
1952 ¹	3,913,115	1,169,490	1,121,825	732,939	386,813	199,921	178,022	124,105
1953 ¹	3,964,750	1,149,993	1,119,751	752,655	412,076	216,238	189,545	124,492
1954 ¹	4,078,055	1,159,644	1,119,393	785,066	442,800	234,717	206,708	129,727
1955 ¹	4,104,112	1,138,375	1,103,633	799,598	461,561	249,060	219,752	132,133
White ¹	3,487,570	999,442	981,956	702,271	385,095	191,364	150,829	76,613
Nonwhite ¹	616,542	138,933	121,677	97,327	76,466	57,696	68,923	55,520

Birth Rate								
1940.....	79.9	29.3	20.0	10.9	6.4	4.1	4.8	4.3
1944.....	88.8	30.2	23.8	13.8	7.6	4.5	4.9	4.0
1945.....	85.9	28.9	22.9	13.4	7.5	4.5	4.8	4.0
1946.....	101.9	38.5	27.9	14.5	7.8	4.5	4.7	3.8
1947.....	113.3	46.7	30.3	15.6	7.9	4.5	4.6	3.7
1948.....	107.3	39.6	30.9	16.1	8.0	4.5	4.6	3.6
1949.....	107.1	36.2	32.1	17.1	8.6	4.7	4.7	3.7
1950.....	106.2	33.3	32.1	18.4	9.2	4.8	4.7	3.6
1951 ¹	111.3	34.8	32.5	20.0	10.2	5.2	5.0	3.6
1952 ¹	113.5	33.9	32.5	21.3	11.2	5.8	5.2	3.6
1953 ¹	114.7	33.3	32.4	21.8	11.9	6.3	5.5	3.6
1954 ¹	117.6	33.5	32.3	22.6	12.8	6.8	6.0	3.7
1955 ¹	118.0	32.7	31.7	23.0	13.3	7.2	6.3	3.8
White ¹	113.2	32.5	31.9	22.8	12.5	6.2	4.9	2.5
Nonwhite ¹	155.1	34.9	30.6	24.5	19.2	14.5	17.3	14.0

NOTE: Birth order refers to number of children born alive to mother. Figures are shown to the last digit as computed for convenience in summation. They are not assumed to be accurate to the last digit. Figures for births of order not stated are distributed, including births that occurred in Massachusetts, which did not require the reporting of birth order. Rates are live births per 1,000 female population aged 15-44 years in each specified group. Population enumerated as of April 1 for 1940 and 1950, and estimated as of July 1 for 1943-49 and 1951-54. Births are adjusted for under-registration. ¹ Based on data from a 50% sample.

Crude Birth Rate for Selected Countries, 1938, 1953, 1955, 1956

Source: Statistical Office of the United Nations.

Country	Rate ¹				Country	Rate ¹			
	1938	1953	1955	1956		1938	1953	1955	1956
North America					Europe (cont.)				
Canada ²	20.7	28.2	28.4	28.1	Hungary.....	19.9	21.6	21.5	*
Costa Rica.....	45.0	39.7	40.3	52.1 ¹³	Ireland.....	19.4	21.2	21.2	*
El Salvador.....	43.7	47.9	47.0	46.2	Italy.....	23.8	17.7	18.1	18.1
Mexico.....	43.5	45.0	46.2	*	Luxemburg.....	14.9	16.0	16.1	16.3
Nicaragua.....	40.8	42.3	37.4	*	Netherlands.....	20.5	21.8	21.4	21.2
Panamá ³	45.5	38.6	39.2	*	Norway.....	15.4	18.7	18.7	18.7
Puerto Rico.....	38.6	35.1	34.4	*	Portugal.....	26.6	23.4	23.9	22.3
United States.....	17.6	24.6	24.6	24.9	Rumania.....	29.6	23.7	*	*
South America					Spain.....	20.1	20.6	20.6	20.7
Chile.....	36.1	34.6	35.0	*	Sweden.....	14.9	15.4	14.8	14.8
Peru ⁴	*	35.0	29.5	*	Switzerland.....	15.2	17.0	17.1	17.5
Venezuela ⁴	33.7	46.1	47.0	*	United Kingdom.....	15.5	15.9	15.4	16.1
Europe					Asia				
Austria.....	13.9	14.8	15.6	16.4	Ceylon.....	35.9	39.4	37.9	*
Belgium.....	16.0	16.6	16.8	16.8	India ⁵	33.3	26.7	30.5	*
Bulgaria.....	22.8	20.7	20.0	*	Israel ⁷	26.3	30.2	27.2	26.7
Czechoslovakia.....	16.7	21.2	20.3	*	Japan ⁸	27.1	21.5	19.4 ¹²	*
Denmark.....	18.1	17.9	17.3	*	Other				
Finland ⁶	21.0	21.9	21.2	20.8	Australia ⁹	17.5	22.9	22.6	22.3
France.....	15.0	18.9	18.6	18.3	New Zealand ¹⁰	18.0	24.1	24.9	24.7
Germany, West.....	19.7	15.6	15.7	16.2	U. of So. Africa ¹¹	25.0	25.1	25.5	25.4

¹ Number of births per 1,000 population. ² Excluding Yukon and Northwest Territories. ³ Excluding tribal Indians. ⁴ Excluding Indian jungle population. ⁵ Prior to 1951, data relate to Finnish nationals in Finland. ⁶ Registration area only. ⁷ Jewish population only. ⁸ Japanese nationals in Japan only. ⁹ Excluding full-blooded aborigines. ¹⁰ Excluding Maoris. ¹¹ White population only (about 20% of total). ¹² Including Amami Islands. ¹³ Exceptionally high rate due to inclusion of delayed registrations. * Not available.

Live Births and Birth Rates by Race

Source: U. S. Public Health Service.

(Rates per 1,000 population in each specified group, enumerated as of Apr. 1 for 1940 and 1950, and estimated as of July 1 for 1945 including Armed Forces overseas)

Race	Births, 1954*	Rates			Race	Births, 1954*	Rates		
		1950	1945	1940			1950	1945	1940
White.....	3,443,630	22.7	19.1	17.5	Japanese.....	6,382	24.1	22.9	14.8
Negro.....	544,288	31.0	23.3	21.7	Other.....	3,004	18.3	20.7	21.0
Indian.....	15,662	39.0	26.8	28.6	All races.....	4,017,362	23.6	19.5	17.9
Chinese.....	4,396	42.9	17.1	14.2					

* Based on 50% sample of births.

Multiple Births in the United States, 1933-50

Source: Statistical Bulletin of the Metropolitan Life Insurance Co.

Age and color of mother	Number of confinements*	Cases of multiple births per million confinements			
		Total	Twins	Triplets	Quadruplets
Total—All ages.....	48,586,704	10,939	10,833	104	1.5
Under 20.....	5,838,182	6,167	6,127	40	.2
20-24.....	15,361,317	8,585	8,519	65	1.0
25-29.....	13,400,847	11,343	11,240	102	1.3
30-34.....	8,299,863	14,347	14,188	157	2.0
35-39.....	4,338,446	17,114	16,890	220	4.4
40-44.....	1,243,764	13,942	13,771	169	1.6
45 and over.....	104,285	8,697	8,592	86	†
Color—All Ages					
White.....	42,538,339	10,621	10,524	96	1.1
Nonwhite.....	6,048,365	13,174	13,005	165	4.3

* Confinements from which at least one infant was born alive. † Cases too few to warrant computation. Source of basic data: Various reports by the National Office of Vital Statistics. Births reported with age of mother unknown were prorated; the age distributions for 1937, 1938, 1942, and 1943 were estimated by the Statistical Bureau, Metropolitan Life Insurance Company.

Live Births by Age of Mother; U. S., 1940-1955

Source: U. S. Public Health Service.

Year and race	Total ¹	Age of mother							
		Under 15 yrs.	15-19 yrs.	20-24 yrs.	25-29 yrs.	30-34 yrs.	35-39 yrs.	40-44 yrs.	45 yrs. and over ²
1940.....	2,558,647	3,865	332,667	799,537	693,268	431,468	222,015	68,269	7,558
1944.....	2,938,891	4,051	322,098	910,710	803,382	536,622	280,490	75,510	6,028
1945.....	2,858,449	4,028	298,868	832,746	785,299	554,906	296,852	78,853	6,897
1946.....	3,410,738	3,863	339,833	1,090,802	967,946	610,736	311,361	79,648	6,549
1947.....	3,816,770	4,911	445,047	1,254,902	1,069,820	635,647	318,516	81,605	6,322
1948.....	3,636,627	5,337	449,568	1,193,146	1,006,183	597,036	301,096	78,387	5,874
1949.....	3,648,867	5,445	448,768	1,183,647	1,029,851	596,014	301,785	77,585	5,772
1950.....	3,631,512	5,413	432,911	1,155,167	1,041,360	610,816	302,780	77,743	5,322
1951 ³	3,822,961	5,460	456,523	1,220,900	1,090,147	649,542	313,843	81,137	5,409
1952 ³	3,913,115	5,358	449,163	1,232,057	1,120,702	690,940	326,299	83,018	5,578
1953 ³	3,964,750	5,634	466,495	1,239,197	1,126,449	702,219	333,652	85,730	5,374
1954 ³	4,078,055	6,396	488,313	1,275,313	1,137,123	731,850	344,490	89,122	5,448
1955 ³	4,014,112	6,181	493,770	1,290,939	1,133,155	732,540	352,320	89,777	5,430
White ³	3,487,570	2,210	376,859	1,099,564	985,188	638,617	303,925	76,820	4,387
Nonwhite ³	616,542	3,971	116,911	191,375	147,967	93,923	48,395	12,957	1,043

Birth rate									
1940.....	79.9	0.7	54.1	135.6	122.8	83.4	46.3	15.6	1.9
1944.....	88.8	0.8	54.3	151.8	136.5	98.1	54.6	16.1	1.4
1945.....	85.9	0.8	51.1	138.9	132.2	100.2	56.9	16.6	1.6
1946.....	101.9	0.7	59.3	181.8	161.2	108.9	58.7	16.5	1.5
1947.....	113.3	0.9	79.3	209.7	176.0	111.9	58.9	16.6	1.4
1948.....	107.3	1.0	81.8	200.3	163.4	103.7	54.5	15.7	1.3
1949.....	107.1	1.0	83.4	200.1	165.4	102.1	53.5	15.3	1.3
1950.....	106.2	1.0	81.6	196.6	166.1	103.7	52.9	15.1	1.2
1951.....	111.3	1.0	86.9	212.0	174.2	108.3	54.1	15.3	1.2
1952.....	113.5	0.9	85.4	218.1	180.4	113.1	56.1	15.3	1.2
1953.....	114.7	0.9	87.5	224.5	183.8	113.0	57.3	15.5	1.1
1954 ³	117.6	1.0	89.8	235.6	188.5	116.4	58.8	15.8	1.1
1955 ³	118.0	0.9	89.7	240.4	190.8	115.8	59.5	15.7	1.1
White ³	113.2	0.4	78.6	233.7	188.0	113.4	57.2	15.0	1.0
Nonwhite ³	155.1	4.9	164.9	288.7	211.7	135.9	79.9	21.3	2.1

NOTE: Births are adjusted for underregistration. Figures are shown to the last digit as computed for convenience in summation. They are not assumed to be accurate to the last digit. Figures for age of mother not stated are distributed. Rates are live births per 1,000 female population in each specified group, enumerated as of April 1 for 1940 and 1950, and estimated as of July 1 for 1943-49 and 1951-54. Figures for age of mother not stated are distributed. ¹ Rates computed by relating total births, regardless of age of mother, to female population aged 15-44 years. ² Rates computed by relating births to mothers 45 years and over, to female population aged 45-49 years. ³ Based on data from a 50% sample.

Households, Families and Married Couples in the United States from 1890 to 1957

Source: U. S. Bureau of the Census.

Date	Households		Families		Married couples
	Number	Average population per household	Number	Average population per family	Number
June 1890.....	12,690,000	4.93	—	—	—
April 1930.....	29,905,000	4.01	—	—	—
April 1940.....	34,949,000	3.67	32,166,000	3.76	25,174,000
March 1950.....	43,554,000	3.37	39,303,000	3.54	28,517,000
March 1957.....	49,543,000	3.37	43,445,000	3.64	36,091,000
					38,940,000

Number of Families in the U. S., April 1940 and 1950

Source: Statistical Bulletin of the Metropolitan Life Insurance Company. Compiled from various reports of the Bureau of the Census.

State	1940	1950	Per cent increase	Persons per family, 1950
Alabama.....	646,000	729,765	13	3.98
Arizona.....	116,000	181,985	57	3.77
Arkansas.....	472,000	477,200	1	3.78
California.....	1,816,000	2,827,110	56	3.29
Colorado.....	278,000	338,205	22	3.51
Connecticut.....	412,000	512,280	24	3.59
Delaware.....	64,000	79,730	25	3.65
D. C.....	165,000	198,180	20	3.26
Florida.....	473,000	721,460	53	3.44
Georgia.....	715,000	824,095	15	3.91
Idaho.....	128,000	148,710	16	3.67
Illinois.....	2,008,000	2,287,955	14	3.45
Indiana.....	892,000	1,039,105	16	3.50
Iowa.....	644,000	686,785	7	3.49
Kansas.....	460,000	507,665	10	3.42
Kentucky.....	671,000	717,535	7	3.86
Louisiana.....	554,000	648,410	17	3.87
Maine.....	201,000	223,175	11	3.75
Maryland.....	431,000	581,840	35	3.68
Massachusetts.....	1,025,000	1,171,805	14	3.62
Michigan.....	1,308,000	1,624,875	24	3.62
Minnesota.....	665,000	747,680	12	3.63
Mississippi.....	504,000	508,960	1	4.04
Missouri.....	986,000	1,057,260	7	3.41
Montana.....	133,000	145,775	10	3.62
Nebraska.....	327,000	344,720	5	3.51
Nevada.....	27,000	40,945	52	3.37
New Hampshire.....	120,000	134,255	12	3.59
New Jersey.....	1,030,000	1,263,570	23	3.54
New Mexico.....	119,000	159,885	34	3.97
New York.....	3,379,000	3,862,050	14	3.47
North Carolina.....	772,000	939,215	22	4.07
North Dakota.....	139,000	144,855	4	3.94
Ohio.....	1,761,000	2,077,595	18	3.53
Oklahoma.....	587,000	590,840	1	3.50
Oregon.....	291,000	411,690	41	3.34
Pennsylvania.....	2,345,000	2,639,925	13	3.68
Rhode Island.....	167,000	198,630	19	3.63
South Carolina.....	410,000	477,780	17	4.19
South Dakota.....	149,000	160,625	8	3.73
Tennessee.....	686,000	808,145	18	3.83
Texas.....	1,580,000	1,978,950	25	3.60
Utah.....	130,000	169,925	31	3.83
Vermont.....	84,000	90,100	7	3.77
Virginia.....	593,000	785,060	32	3.85
Washington.....	451,000	625,185	39	3.36
West Virginia.....	434,000	479,265	10	3.95
Wisconsin.....	758,000	867,990	15	3.64
Wyoming.....	60,000	72,235	20	3.57
United States.....	32,166,000	38,310,980	19	3.60

Portraits and Designs of U. S. Paper Currency

Denomi- nation	Portrait	Design on back	Denomi- nation	Portrait	Design on back
\$1	Washington	ONE between obverse and re- verse of Great Seal of U. S.	\$100	Franklin	Independence Hall.
			\$500	McKinley	Ornate FIVE HUNDRED across.
\$2	Jefferson	Monticello.	\$1,000	Cleveland	Ornate ONE THOUSAND across.
\$5	Lincoln	Lincoln Memorial.	\$5,000	Madison	Ornate FIVE THOUSAND across.
\$10	Hamilton	U. S. Treasury Building.	\$10,000	Chase	Ornate TEN THOUSAND across.
\$20	Jackson	White House.	\$100,000*	Wilson	100,000 superimposed over dol- lar sign.
\$50	Grant	U. S. Capitol.			

* For use only in transactions between Federal Reserve System and Treasury Department.

MORTALITY

Death Rates in the United States, 1900-1956

Source: U. S. Public Health Service.

Year	Rate ¹	Year	Rate ¹	Year	Number of deaths	Rate ¹
1900.....	17.2	1919.....	12.9	1938.....	1,381,391	10.6
1901.....	16.4	1920.....	13.0	1939.....	1,387,897	10.6
1902.....	15.5	1921.....	11.5	1940.....	1,417,269	10.8
1903.....	15.6	1922.....	11.7	1941.....	1,397,642	10.5
1904.....	16.4	1923.....	12.1	1942.....	1,385,187	10.3
1905.....	15.9	1924.....	11.6	1943.....	1,459,544	10.9
1906.....	15.7	1925.....	11.7	1944.....	1,411,338	10.6
1907.....	15.9	1926.....	12.1	1945.....	1,401,719	10.6
1908.....	14.7	1927.....	11.3	1946.....	1,395,617	10.0
1909.....	14.2	1928.....	12.0	1947.....	1,445,370	10.1
1910.....	14.7	1929.....	11.9	1948.....	1,444,337	9.9
1911.....	13.9	1930.....	11.3	1949.....	1,443,607	9.7
1912.....	13.6	1931.....	11.1	1950.....	1,452,454	9.6
1913.....	13.8	1932.....	10.9	1951.....	1,482,099	9.7
1914.....	13.3	1933.....	10.7	1952.....	1,496,838	9.6
1915.....	13.2	1934.....	11.1	1953.....	1,517,541	9.6
1916.....	13.8	1935.....	10.9	1954.....	1,481,091	9.2
1917.....	14.0	1936.....	11.6	1955.....	1,528,717	9.3
1918.....	18.1	1937.....	11.3	1956 ²	1,565,000	9.4

¹ Rates are per 1,000 population as of July 1 for each year except 1940 and 1950 which are as of April 1, the census date. Rates are based on population excluding armed forces overseas. Fetal deaths are excluded. Data relate to the total United States only from 1933; for earlier years, the death rates relate to Death Registration States. ² Provisional.

Death Rates* by Age and Sex; U. S., 1900-1956

Source: U. S. Public Health Service.

Age group, years	1900	1920	1940	1950	1956	1900	1920	1940	1950	1956
	White Males					White Females				
Under 1.....	175.9	98.1	56.7	34.0	29.8	142.6	76.1	43.6	25.7	22.5
1-4.....	20.2	9.8	2.8	1.4	1.0	18.7	9.0	2.4	1.1	0.9
5-14.....	3.8	2.7	1.1	.7	0.5	3.8	2.3	.8	.5	0.3
15-24.....	5.8	4.2	2.0	1.5	1.5	5.6	4.3	1.4	.7	0.5
25-34.....	8.1	5.9	2.8	1.9	1.7	8.1	6.5	2.2	1.1	0.9
35-44.....	10.6	7.7	5.1	3.8	3.4	9.6	7.3	3.7	2.4	1.9
45-54.....	15.5	12.0	11.4	9.8	9.2	14.0	10.9	7.5	5.5	4.7
55-64.....	28.5	24.2	25.2	23.0	22.2	25.5	21.7	16.8	12.9	11.1
65-74.....	59.1	54.2	54.0	48.6	49.2	53.4	49.9	41.5	32.4	29.6
75-84.....	128.2	122.5	122.0	105.3	103.3	118.9	116.4	104.8	84.8	79.2
85 and over.....	...	...	251.4	221.2	199.1	...	...	235.0	196.8	191.9
	Nonwhite Males					Nonwhite Females				
Under 1.....	369.3	167.7	101.2	59.9	58.1	299.5	131.1	77.4	47.5	46.0
1-4.....	43.4	15.0	5.3	2.7	2.1	43.5	14.2	4.4	2.3	1.7
5-14.....	7.8	3.7	1.6	1.0	0.9	10.1	3.9	1.4	.7	0.5
15-24.....	11.8	9.9	5.0	2.9	2.3	11.2	10.8	5.0	2.2	1.2
25-34.....	12.5	12.2	8.5	5.0	4.3	11.7	13.5	7.4	3.9	2.9
35-44.....	14.2	14.4	13.2	8.6	7.3	15.6	16.0	11.7	7.5	5.9
45-54.....	24.7	20.1	24.5	18.6	15.4	23.9	23.4	21.1	15.5	11.7
55-64.....	42.1	31.1	37.1	34.8	33.1	42.1	35.8	33.2	27.6	24.4
65-74.....	71.6	60.2	62.8	57.9	61.6	66.4	60.4	52.3	46.1	49.3
75-84.....	131.4	116.0	108.8	90.3	80.9	113.2	106.4	84.1	70.6	60.6
85 and over.....	...	...	199.7	160.2	102.6	...	...	159.7	133.7	81.6

* Rates per 1,000 population of specified age, sex and race; 1956 is estimated.

Deaths and Infant Deaths in Each State Reporting, 1955-56

Source: U. S. Public Health Service.

State	DEATHS (ALL AGES)						INFANT DEATHS (UNDER 1 YEAR)					
	Number			Rate			Number			Rate		
	1955	1956	Percent change	1955	1956	Percent change	1955	1956	Percent change	1955	1956	Percent change
Alabama.....	26,377	27,003	+2.4	8.5	8.6	+1.2	2,633	2,573	-2.3	32.2	30.7	-4.7
Arizona.....	7,961	8,469	+6.4	7.9	8.0	+1.3	978	967	-1.1	34.7	32.3	-6.9
Arkansas.....	14,995	15,504	+3.4	8.3	8.5	+2.4	1,011	1,034	+2.3	24.0	24.4	+1.7
California.....	113,847	117,815	+3.5	8.8	8.8	0	7,572	7,774	+2.6	24.4	23.6	-3.3
Colorado.....	13,688	13,981	+2.1	8.8	8.7	-1.1	1,192	1,241	+4.1	29.1	29.1	0
Connecticut.....	21,539	21,494	-0.2	9.8	9.6	-2.0	1,111	1,138	+2.4	21.7	21.6	-0.5
Delaware.....	3,854	3,844	-0.3	9.9	9.6	-3.0	250	246	-1.6	24.5	21.5	-12.2
D. C.....	9,156	9,502	+3.8	10.7	11.0	+2.8	858	912	+6.3	27.5	27.2	-1.1
Florida.....	34,872	38,852	+11.4	9.7	10.3	+6.2	2,587	3,138	+21.3	29.0	32.4	+11.7
Georgia.....	30,879	31,901	+3.3	8.4	8.6	+2.4	2,969	3,109	+4.7	29.4	30.1	+2.4
Idaho.....	4,838	4,932	+2.0	7.9	7.9	0	342	354	+3.5	20.5	21.5	+4.9
Illinois.....	93,993	95,196	+1.3	10.1	10.1	0	5,395	5,513	+2.2	25.0	24.5	-2.0
Indiana.....	41,503	42,203	+1.7	9.6	9.6	0	2,652	2,707	+2.1	24.6	23.7	-3.7
Iowa.....	26,917	26,566	-1.3	10.1	9.9	-2.0	1,368	1,306	-4.5	21.2	20.4	-3.8
Kansas.....	18,969	19,486	+2.7	9.2	9.3	+1.1	1,215	1,211	-0.3	23.8	23.4	-1.7
Kentucky.....	27,250	27,901	+2.4	9.1	9.2	+1.1	2,202	2,134	-3.1	29.3	28.1	-4.1
Louisiana.....	24,227	26,369	+8.8	8.3	8.8	+6.0	2,695	2,655	-1.5	31.8	30.1	-5.3
Maine.....	10,077	10,026	-0.5	11.1	11.0	-0.9	493	516	+4.7	22.7	23.0	+1.3
Maryland.....	24,323	25,205	+3.6	8.9	9.0	+1.1	1,821	1,767	-3.0	28.7	27.0	-5.9
Massachusetts.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan.....	62,992	64,119	+1.8	8.6	8.5	-1.2	4,842	5,013	+3.5	24.9	24.5	-1.6
Minnesota.....	29,025	29,902	+3.0	9.1	9.2	+1.1	1,789	1,759	-1.7	22.3	21.6	-3.1
Mississippi.....	19,424	19,947	+2.7	9.1	9.4	+3.3	2,281	2,373	+4.0	34.3	36.1	+5.2
Missouri.....	44,468	44,942	+1.1	10.6	10.6	0	2,526	2,405	-4.8	26.1	24.6	-5.7
Montana.....	6,192	6,482	+4.7	9.8	10.2	+4.1	427	489	+14.5	24.8	28.0	+12.9
Nebraska.....	13,172	13,430	+2.0	9.4	9.5	+1.1	753	679	-9.8	22.3	20.2	-9.4
Nevada.....	2,175	2,181	+0.3	9.3	8.8	-5.4	190	227	+19.5	30.6	35.2	+15.0
New Hampshire.....	6,588	6,482	-1.6	11.9	11.6	-2.5	309	277	-10.4	25.0	22.6	-9.6
New Jersey.....	52,945	53,070	+0.2	9.9	9.8	-1.0	2,813	2,875	+2.2	24.2	24.2	0
New Mexico.....	5,696	5,635	-1.1	7.2	6.9	-4.2	1,123	950	-15.4	43.3	35.9	-17.1
New York.....	165,549	166,504	+0.6	10.3	10.3	0	8,360	8,308	-0.6	24.3	23.8	-2.1
North Carolina.....	32,564	33,618	+3.2	7.5	7.6	+1.3	3,529	3,558	+0.8	30.5	30.6	+0.3
North Dakota.....	5,198	5,200	+0.0	8.1	7.9	-2.5	446	425	-4.7	25.5	25.5	0
Ohio.....	84,115	88,366	+5.1	9.4	9.7	+3.2	5,421	5,597	+3.2	24.5	23.9	-2.4
Oklahoma.....	19,288	20,622	+6.9	8.7	9.2	+5.7	1,307	1,353	+3.5	25.6	25.9	+1.2
Oregon.....	15,266	15,367	+0.7	9.1	8.9	-2.2	927	896	-3.3	24.2	23.6	-2.5
Pennsylvania.....	112,912	113,915	+0.9	10.4	10.4	0	5,985	6,107	+2.0	25.1	24.6	-2.0
Rhode Island.....	8,578	8,426	-1.8	10.5	10.2	-2.9	397	438	+10.3	20.7	22.6	+9.2
South Carolina.....	17,795	17,887	+0.5	7.7	7.6	-1.3	2,110	1,953	-7.4	33.6	30.8	-8.3
South Dakota.....	5,918	6,075	+2.7	8.7	8.7	0	474	421	-11.2	25.2	23.0	-8.7
Tennessee.....	30,400	30,971	+1.9	8.9	8.9	0	2,636	2,482	-5.8	30.4	28.7	-5.6
Texas.....	65,048	69,301	+6.5	7.4	7.8	+5.4	7,149	7,027	-1.7	30.1	28.5	-5.3
Utah.....	5,383	5,579	+3.6	6.8	6.9	+1.5	510	573	+12.4	20.3	22.5	+10.8
Vermont.....	4,264	4,498	+5.5	11.5	12.2	+6.1	240	201	-16.2	25.6	22.6	-11.7
Virginia.....	30,038	31,043	+3.3	8.4	8.5	+1.2	2,740	2,810	+2.6	30.5	30.4	-0.3
Washington.....	24,557	24,500	-0.2	9.4	9.2	-2.1	1,528	1,550	+1.4	23.6	23.6	0
West Virginia.....	16,807	17,209	+2.4	8.5	8.7	+2.4	1,215	1,144	-5.8	26.8	24.9	-7.1
Wisconsin.....	35,235	35,657	+1.2	9.5	9.5	0	2,161	2,138	-1.1	23.5	22.9	-2.6
Wyoming.....	2,536	2,540	+0.2	8.1	7.9	-2.5	241	232	-3.7	28.5	27.9	-2.1

NOTE: Rates for deaths at all ages are per 1,000 estimated midyear population in each specified area; infant mortality rates are deaths under one year per 1,000 live births in each specified area. Data are by place of occurrence, exclusive of fetal deaths and of deaths among armed forces overseas. Data are provisional. Leaders (....) indicate data not available.

Average of Annual Death Rates for Selected Causes; U. S., 1900-1956

Source: U. S. Public Health Service.

Cause of death	Death rates per 100,000 in						
	5th revision					Sixth revision	
	1900-04	1920-24	1940-44	1945-49	1950	1950	1956 est.
Typhoid fever.....	26.8	7.4	.7	.2	.1	.1	§
Communicable diseases of child- hood.....	65.3	34.0	4.6	2.3	1.3	1.5	§
Measles.....	10.0	7.2	1.1	.5	.3	.3	.4
Scarlet fever.....	11.8	4.0	.3	.1	†	.2	.1
Whooping cough.....	10.7	9.0	2.2	1.0	.7	.7	.2
Diphtheria.....	32.8	13.8	1.0	.7	.3	.3	0.0
Diarrhea and enteritis.....	115.6	43.2	9.8	6.5	5.0	5.1	§
Pneumonia and influenza.....	184.4	141.1	63.8	42.5	35.1	31.3	28.3
Influenza.....	22.9	35.2	13.1	5.1	3.5	4.4	1.3
Pneumonia.....	161.5	105.9	50.7	37.4	31.6	26.9	27.0
Tuberculosis.....	184.8	97.1	43.5	33.5	23.4	22.5	8.3
Cancer.....	67.6	86.8	123.2	133.8	138.4	139.8	146.6
Diabetes mellitus.....	12.2	17.0	26.2	26.8	28.4	16.2	15.8
Cardiovascular-renal diseases.....	338.2	340.9	466.1	465.5	465.0	510.8	513.3
Diseases of the heart.....	147.7	166.1	302.2	318.6	326.1	355.5	361.8
Cerebral hemorrhage.....	106.3	93.4	91.8	91.5	92.0	104.0	107.1
Chronic nephritis.....	84.2	81.4	72.1	55.3	46.9	16.4	8.8
Syphilis.....	12.9	17.5	12.7	8.9	6.8	5.0	2.4
Appendicitis.....	9.3	14.0	7.3	3.5	2.2	2.0	1.1
Accidents, all forms.....	79.1	71.6	73.4	68.4	63.8	60.6	56.4
Motor vehicle accidents.....	—	12.8	22.7	22.3	23.1	23.1	24.3
Infant mortality*.....	—	77.1	42.6	33.5	29.2	29.2	26.0
Neonatal mortality*.....	—	39.8	26.3	22.9	20.5	20.5	18.8
Fetal mortality*.....	—	39.2†	28.6	24.5	22.9	22.9	§
Maternal mortality.....	—	6.9	2.9	1.4	.8	.8	.4
All causes.....	1622.3	1198.0	1062.8	1005.4	963.8	963.8	936.1

* Rates per 1,000 live births. † Less than .05. ‡ 1922-24. § Not available. NOTE: Rates per 100,000 population. The figures beginning with 1940 relate to the total United States; for earlier periods the figures relate to the Death Registration States. The death rates for 1950 are shown on the basis of both the Fifth and the Sixth Revision of the International List of Causes of Death. Because of radical changes from the Fifth to the Sixth Revisions, the death rates are not strictly comparable. Death rates for 1956 are based upon the Sixth Revision; 1956 figures are estimates.

Death Rates by Marital Status, Age, and Sex; U. S., Annual Average for 1949-51

Source: D. Shurtleff, "Mortality and Marital Status," Public Health Reports, March 1955.

Age (in years)	Male					Female				
	Single	Married	Widowed	Divorced	Total ¹	Single	Married	Widowed	Divorced	Total ¹
Under 20 ²	3.4	1.6	2.0	2.3	3.4	2.6	1.0	4.8	1.6	2.5
20-24.....	2.2	1.5	5.7	3.4	1.9	1.2	.9	3.4	1.7	1.0
25-34.....	3.6	1.7	8.6	5.8	2.2	2.2	1.2	4.1	2.6	1.4
35-44.....	8.5	3.6	12.1	11.8	4.3	3.9	2.6	6.2	4.5	2.9
45-54.....	17.8	9.3	21.6	23.2	10.7	7.0	5.7	10.3	8.1	6.5
55-59.....	30.0	17.8	30.4	36.5	20.0	11.5	10.2	14.8	13.8	11.4
60-64.....	41.0	25.8	39.5	48.6	29.0	16.6	15.7	20.7	21.1	17.5
65-69.....	55.0	36.5	50.0	66.1	41.1	24.8	23.5	28.1	33.1	26.0
70-74.....	78.8	54.3	69.1	91.9	60.4	42.3	39.0	44.8	58.2	43.2
75 and over.....	137.3	100.3	139.0	173.3	119.4	103.6	76.0	106.2	129.2	101.6
All ages ²	5.4	12.1	70.5	26.1	11.1	3.9	5.8	41.1	8.8	8.3

¹ Includes deaths for which marital status was not stated. ² Includes deaths for which age was not stated. ³ Rates for "Total" and "Single" are based on deaths and population at ages 0-19 years. Rates for "Married," "Widowed," and "Divorced" are based on deaths and population at ages 15-19 years. NOTE: Rates are per 1,000 population in each specified group enumerated in the Census of April 1, 1950. Deaths among armed forces overseas are excluded.

Crude Death Rate for Selected Countries, 1938, 1953, 1955, 1956

Source: Statistical Office of the United Nations.

Country	Rate ¹				Country	Rate ¹			
	1938	1953	1955	1956		1938	1953	1955	1956
North America					Europe (cont.)				
Canada ²	9.7	8.6	8.2	8.2	Hungary.....	14.3	11.7	10.0	*
Costa Rica.....	17.7	11.7	10.5	9.6	Ireland.....	13.6	11.7	12.6	*
El Salvador.....	19.1	14.7	14.2	12.2	Italy.....	14.1	10.0	9.3	10.3
Mexico.....	22.9	15.9	13.3	*	Luxemburg.....	12.7	12.5	11.3	12.5
Nicaragua.....	14.5	10.2	8.4	*	Netherlands.....	8.5	7.7	7.6	7.8
Panamá ³	14.2	9.4	9.3	*	Norway.....	9.9	8.5	8.3	8.5
Puerto Rico.....	18.7	8.1	7.2	*	Portugal.....	15.4	11.3	11.3	12.0
United States.....	10.6	9.6	9.3	9.4	Rumania.....	19.2	11.5	*	*
South America					Spain.....	19.3	9.7	9.4	9.9
Chile.....	23.1	12.4	12.8	*	Sweden.....	11.5	9.7	9.4	9.6
Peru ⁴	16.2	11.8	6.5	*	Switzerland.....	11.6	10.2	10.1	10.2
Venezuela.....	18.3	9.9	10.2	*	United Kingdom.....	11.8	11.4	11.7	11.7
Europe					Asia				
Austria.....	14.0	12.0	12.2	12.3	Ceylon.....	21.0	10.9	11.0	*
Belgium.....	13.2	12.1	12.2	12.6	India ⁵	23.7	15.0	12.7	*
Bulgaria.....	13.7	9.2	9.0	*	Israel ⁷	8.1	6.3	5.8	6.3
Czechoslovakia.....	13.2	10.5	9.6	*	Japan ⁸	17.7	8.9	7.8	*
Denmark.....	10.3	9.0	8.7	*	Other				
Finland ⁶	12.8	9.6	9.3	9.0	Australia ⁹	9.6	9.1	8.9	9.1
France.....	15.8	13.1	12.2	12.4	New Zealand ¹⁰	9.7	8.8	9.0	9.0
Germany, West.....	11.4	11.0	10.8	11.0	U. of So. Africa ¹¹	9.5	8.6	8.5	8.8

¹ Number of deaths per 1,000 population. ² Excluding Yukon and Northwest Territories. ³ Excluding tribal Indians. ⁴ Excluding Indian jungle population. ⁵ Prior to 1951, data relate to Finnish Nationals in Finland. ⁶ Registration area only. ⁷ Jewish population only. ⁸ Japanese nationals in Japan only. ⁹ Excludes full-blooded aborigines. ¹⁰ Excluding Maoris. ¹¹ White population only (about 20% of total). * Not available.

Transportation-Accident Death Rates, 1954-56

Source: National Safety Council.

Kind of transportation	1956			1954-56 Average death rate
	Passenger miles	Passenger deaths	Death rate ¹	
Passenger automobiles and taxis.....	970,000,000,000	26,100 ²	2.7	2.7
Busses.....	51,500,000,000	80	0.16	0.15
Railroad passenger trains.....	28,190,000,000	57	0.20	0.11
Scheduled air transport planes (domestic).....	23,160,000,000	143	0.62	0.52

¹ Per 100,000,000 passenger miles. ² Drivers of passenger automobiles are considered passengers.

One Accidental Death Every 6 Minutes in 1956

Source: National Safety Council.

The nation's 1956 accident totals can be figured at the following approximate rates:

Class of accident	One every	Class of accident	One every
All accidents	Deaths 6 minutes	Workers off-job	Deaths 16 minutes
	Injuries 3 seconds		Injuries 13 seconds
Motor-vehicle	Deaths 13 minutes	Home	Deaths 19 minutes
	Injuries 23 seconds		Injuries 8 seconds
Work	Deaths 37 minutes	Public non-motor-vehicle	Deaths 33 minutes
	Injuries 16 seconds		Injuries 16 seconds

Motor-Vehicle Deaths by Type of Accident, 1913 to 1956

Source: National Safety Council.

Year	Deaths from collisions with—							Deaths from non-collision accidents*	Total deaths†
	Pedestrians	Other motor vehicles	Railroad trains	Street cars	Bicycles	Animal-drawn vehicle or animal	Fixed objects*		
1913.....	.....	.....	.....	...	...	...	.....	.....	4,200
1918.....	.....	.....	.....	...	...	...	.....	.....	10,700
1923.....	.....	.....	.....	...	...	...	.....	.....	18,400
1928.....	11,420	4,310	2,140	570	950		540	8,070	28,000
1933.....	12,840	6,470	1,437	318	400	310	900	8,680	31,363
1938.....	12,850	8,900	1,490	165	720	170	940	7,350	32,582
1943.....	9,900	5,300	1,448	171	450	160	700	5,690	23,823
1948.....	9,950	10,200	1,474	83	500	100	1,000	8,950	32,259
1950.....	9,100	11,250	1,541	89	450	110	1,300	10,950	34,763
1952.....	8,600	12,900	1,429	32	400	100	1,500	12,850	37,794
1953.....	8,700	12,600	1,506	26	450	100	1,500	13,050	37,955
1954.....	8,000	11,750	1,269	28	400	80	1,500	12,550	35,586
1955.....	8,200	13,000	1,490	15	450	100	1,600	13,550	38,426
1956.....	7,950	13,850	1,280	10	480	140	1,650	14,650	40,000

* The proportion of deaths allocated to fixed-object collisions and noncollision accidents is different from that reported by most states. State reports generally indicate that many accidents involving no collision on the roadway are classified as fixed-object collisions because the motor vehicle collides with an object after leaving the roadway.

† The totals do not quite equal the sum of the various types because the estimates were generally made only to the nearest 10 deaths, and to the nearest 50 deaths for certain types.

Motor-Vehicle Traffic Deaths by States, 1955-56

Source: National Safety Council.

State	1955	Rate ¹	1956	Rate ¹	State	1955	Rate ¹	1956	Rate ¹
Alabama.....	845	8.6	971	9.2	Nebraska.....	318	5.1	314	5.0
Arizona.....	361	8.2	486	10.1	Nevada.....	174	11.1	139	8.4
Arkansas.....	416	6.9	486	7.6	New Hampshire.....	106	5.0	96	4.3
California.....	3,431	6.2	3,804	6.3	New Jersey.....	791	3.6	772	3.4
Colorado.....	429	6.7	409	6.0	New Mexico.....	361	9.1	400	9.1
Connecticut.....	324	3.9	286	3.3	New York.....	2,185	5.4	2,200	5.2
Delaware.....	110	6.6	87	4.8	North Carolina.....	1,165	7.7	1,108	6.9
D. C.....	72	2.8	54	2.1	North Dakota.....	144	6.6	169	7.7
Florida.....	995	6.6	1,205	7.2	Ohio.....	2,074	6.0	2,013	5.5
Georgia.....	1,088	8.2	1,131	8.0	Oklahoma.....	595	6.2	683	6.8
Idaho.....	186	6.6	249	8.4	Oregon.....	414	5.8	421	5.6
Illinois.....	2,195	6.8	2,135	6.6	Pennsylvania.....	1,727	5.0	1,790	4.9
Indiana.....	1,146	6.1	1,222	6.1	Rhode Island.....	87	3.0	68	2.3
Iowa.....	609	5.5	699	6.0	South Carolina.....	713	9.4	718	9.0
Kansas.....	592	6.7	683	7.3	South Dakota.....	197	7.5	196	6.5
Kentucky.....	862	9.3	778	7.9	Tennessee.....	906	8.0	766	6.4
Louisiana.....	681	7.5	898	9.0	Texas.....	2,547	6.4	2,611	6.3
Maine.....	164	4.6	160	4.4	Utah.....	203	6.6	214	6.6
Maryland.....	519	5.7	549	5.7	Vermont.....	90	6.2	97	6.5
Massachusetts.....	569	3.8	555	3.8	Virginia.....	879	6.6	830	5.8
Michigan.....	2,016	7.1	1,747	6.1	Washington.....	466	4.6	533	5.1
Minnesota.....	580	4.8	638	5.1	West Virginia.....	368	6.6	438	7.4
Mississippi.....	547	8.1	561	7.9	Wisconsin.....	932	7.0	955	7.1
Missouri.....	1,071	6.2	1,127	6.3	Wyoming.....	143	7.1	173	8.6
Montana.....	236	8.1	267	8.1					

¹ Number of deaths per 100,000,000 vehicle-miles. NOTE: Figures are per state traffic authorities and indicate place of accident rather than of death.

Average Annual Accidental Death Rates, 1953-54

(Rates are per 100,000 population by place of residence)

Source: Statistical Bulletin of the Metropolitan Life Insurance Company. Compiled from various reports by the National Office of Vital Statistics.

State	Acci- dents, total	Motor vehicles	Falls	Burns and confla- grations	Drown- ings	Fire- arms	Ma- chinery	Absorp- tion of poison- ous gas	Poison- ing by solids and liquids	Water trans- port
Alabama.....	62.8	27.4	7.0	7.6	3.4	2.2	1.4	.3	1.2	1.6
Arizona.....	81.8	38.5	7.6	6.1	5.2	2.7	.9	.5	1.6	.4
Arkansas.....	62.0	23.7	8.1	8.1	3.7	2.6	1.7	.2	.8	1.4
California.....	55.9	27.5	8.0	3.6	3.2	1.0	.9	.8	1.6	.9
Colorado.....	62.7	25.9	13.0	3.7	2.7	2.0	1.9	1.0	.8	.6
Connecticut.....	44.2	13.2	15.6	2.7	2.7	.6	.6	1.4	1.0	.7
Delaware.....	63.5	25.9	11.3	6.1	5.2	.7	1.1	.3	1.3	1.9
D. C.....	56.4	14.2	19.8	5.0	3.0	.4	.3	.5	.8	1.1
Florida.....	65.0	27.3	9.3	5.0	5.8	2.2	1.0	.7	1.1	2.0
Georgia.....	62.6	26.4	7.7	6.8	3.3	2.5	1.4	.3	1.3	1.4
Idaho.....	81.5	36.1	9.0	4.1	5.8	4.0	3.8	.6	1.0	1.5
Illinois.....	54.9	22.4	13.5	4.0	2.8	1.4	1.2	.8	.7	.7
Indiana.....	64.3	27.7	15.9	4.4	2.7	1.4	1.5	.8	.9	.6
Iowa.....	62.5	23.4	17.8	2.8	2.4	1.1	3.0	.8	.6	.9
Kansas.....	69.5	29.2	13.7	4.7	3.0	1.7	2.5	.8	.6	.6
Kentucky.....	69.2	27.1	14.0	6.6	3.6	2.5	1.4	.7	.8	.8
Louisiana.....	60.8	22.6	8.5	6.7	5.2	1.8	1.4	.3	.9	3.1
Maine.....	57.9	19.8	12.0	5.3	4.2	1.6	1.1	1.6	.4	3.1
Maryland.....	52.0	19.4	11.4	4.7	3.8	1.5	.8	.7	1.0	1.3
Massachusetts.....	54.2	12.1	24.7	3.4	3.1	.5	.5	.9	.8	.8
Michigan.....	60.0	28.5	12.1	3.5	3.2	.9	1.1	.8	.7	1.3
Minnesota.....	58.6	22.4	14.3	3.3	3.3	1.5	2.3	1.1	.8	1.7
Mississippi.....	65.6	22.9	7.0	9.8	4.8	3.7	1.9	.3	1.1	1.4
Missouri.....	68.9	25.2	17.6	5.9	2.7	1.9	2.2	.5	.7	.7
Montana.....	90.6	36.7	13.2	5.5	5.5	3.6	3.0	2.2	.7	2.1
Nebraska.....	63.0	25.1	15.0	3.5	2.7	1.6	2.8	.7	.6	.6
Nevada.....	98.9	49.4	10.1	4.6	4.4	3.4	1.0	1.5	2.0	.5
New Hampshire.....	51.2	16.7	16.1	4.3	2.5	1.0	1.3	.6	1.0	.9
New Jersey.....	42.0	14.8	12.8	3.1	2.6	.4	.7	.9	.6	.6
New Mexico.....	78.2	39.5	6.8	5.8	3.3	3.1	1.6	1.5	1.0	.4
New York.....	45.8	14.9	16.2	3.1	2.7	.6	.7	1.1	.6	.7
North Carolina.....	59.3	26.6	6.4	5.6	3.8	2.0	1.3	.2	1.2	1.5
North Dakota.....	63.7	26.8	10.5	3.6	4.4	2.2	4.0	1.1	.3	1.0
Ohio.....	58.2	23.8	16.2	3.7	2.2	.8	1.3	1.1	.7	.7
Oklahoma.....	68.2	26.1	12.2	5.6	3.3	2.2	1.4	1.0	.7	.3
Oregon.....	66.1	25.9	8.7	3.5	4.3	2.0	3.1	1.9	.9	2.1
Pennsylvania.....	51.7	16.8	16.9	3.9	2.2	.9	1.2	1.0	.7	.5
Rhode Island.....	41.5	9.8	14.8	2.6	3.2	.4	.4	1.8	.9	2.0
South Carolina.....	63.2	28.2	5.8	7.2	4.0	2.9	1.3	.2	1.6	1.3
South Dakota.....	69.1	27.4	12.6	4.0	4.1	2.0	4.7	.7	.7	.8
Tennessee.....	55.6	24.1	8.9	5.1	3.0	1.9	1.5	.4	.8	1.0
Texas.....	65.2	29.8	7.7	5.6	4.6	2.2	1.5	.5	.9	.7
Utah.....	63.7	27.8	9.7	2.6	3.3	4.3	1.5	.5	.8	.3
Vermont.....	56.1	15.9	16.0	5.6	4.8	1.8	2.4	.6	.5	1.3
Virginia.....	58.1	23.3	9.7	5.9	3.8	1.6	1.1	.3	1.1	1.1
Washington.....	59.4	20.7	12.8	3.6	4.6	1.3	1.5	1.2	1.0	1.8
West Virginia.....	62.5	21.3	11.0	5.8	3.9	2.3	1.5	1.0	.7	.7
Wisconsin.....	57.0	24.6	13.5	2.9	3.7	1.1	1.8	.6	.7	1.5
Wyoming.....	87.6	40.6	9.3	5.0	3.0	5.0	3.7	3.1	.5	.5
United States.....	58.0	23.1	12.7	4.5	3.3	1.4	1.3	.8	.9	1.0

Hospital Facilities in the U. S., 1956

Source: American Hospital Association.

State	Total—all hospitals			State	Total—all hospitals		
	No. of hospitals	No. of beds	Admissions during year*		No. of hospitals	No. of beds	Admissions during year*
Alabama.....	130	22,436	376,003	Nebraska.....	114	12,839	203,434
Arizona.....	73	7,990	155,367	Nevada.....	18	1,734	38,905
Arkansas.....	87	14,853	212,335	New Hampshire.....	40	6,848	84,078
California.....	436	121,400	1,659,516	New Jersey.....	158	53,884	613,895
Colorado.....	101	18,586	262,518	New Mexico.....	53	5,752	108,855
Connecticut.....	74	23,086	310,825	New York.....	494	230,274	2,059,023
Delaware.....	17	4,961	52,740	North Carolina.....	181	33,615	569,254
D. C.....	25	14,287	183,787	North Dakota.....	63	6,715	109,004
Florida.....	154	25,559	504,316	Ohio.....	259	78,676	1,127,543
Georgia.....	151	28,437	458,541	Oklahoma.....	126	19,245	271,726
Idaho.....	51	3,867	88,658	Oregon.....	79	13,033	225,301
Illinois.....	339	106,975	1,299,946	Pennsylvania.....	351	116,573	1,433,457
Indiana.....	143	32,095	514,233	Rhode Island.....	23	9,700	99,324
Iowa.....	130	21,588	352,977	South Carolina.....	77	17,393	304,519
Kansas.....	155	17,895	305,079	South Dakota.....	68	7,617	106,305
Kentucky.....	134	23,362	400,487	Tennessee.....	155	27,542	446,527
Louisiana.....	134	23,737	445,723	Texas.....	561	60,957	1,273,267
Maine.....	56	9,281	106,819	Utah.....	39	5,458	95,641
Maryland.....	83	29,934	314,096	Vermont.....	30	4,697	57,480
Massachusetts.....	216	68,565	681,624	Virginia.....	123	31,254	474,820
Michigan.....	261	72,568	987,436	Washington.....	138	23,673	405,079
Minnesota.....	206	33,107	512,399	West Virginia.....	94	16,266	303,650
Mississippi.....	106	14,477	237,098	Wisconsin.....	213	36,205	574,500
Missouri.....	151	38,795	503,903	Wyoming.....	33	3,888	59,368
Montana.....	63	6,013	118,338	Total.....	6,966	1,607,692	22,089,719

* Data estimated for nonreporting hospitals. Excludes newborn.

EXPECTATION OF LIFE

Expectation of Life and Mortality Rates, 1955

Source: Metropolitan Life Insurance Co. from abridged life tables prepared by U. S. Public Health Service.

Age, years	Expectation of Life in Years					Mortality Rate per 1,000				
	Total Persons	White		Nonwhite		Total Persons	White		Nonwhite	
		Male	Female	Male	Female		Male	Female	Male	Female
0.....	69.5	67.3	73.6	61.2	65.9	26.5	26.8	20.4	47.2	38.9
1.....	70.4	68.2	74.2	63.2	67.5	1.8	1.7	1.4	3.7	3.2
2.....	69.5	67.3	73.2	62.4	66.7	1.1	1.1	.9	2.1	1.6
3.....	68.6	66.4	72.3	61.6	65.8	.9	.9	.7	1.3	1.4
4.....	67.7	65.5	71.4	60.6	64.9	.7	.7	.6	1.0	1.1
5.....	66.7	64.5	70.4	59.7	64.0	.7	.6	.5	.9	.8
6.....	65.8	63.5	69.5	58.7	63.1	.5	.6	.4	.8	.6
7.....	64.8	62.5	68.5	57.8	62.1	.5	.5	.4	.7	.5
8.....	63.9	61.5	67.6	56.8	61.1	.4	.5	.3	.6	.5
9.....	62.9	60.6	66.6	55.9	60.2	.4	.5	.3	.6	.4
10.....	61.9	59.6	65.6	54.9	59.2	.4	.4	.3	.6	.5
11.....	60.9	58.7	64.6	53.9	58.2	.4	.5	.3	.7	.5
12.....	59.9	57.7	63.6	53.0	57.2	.5	.5	.3	.8	.5
13.....	58.9	56.7	62.7	52.0	56.2	.5	.7	.3	.9	.6
14.....	58.0	55.8	61.7	51.0	55.3	.6	.8	.4	1.0	.6
15.....	57.0	54.8	60.7	50.1	54.3	.7	1.0	.4	1.2	.7

Expectation of Life and Mortality Rates (Contd.)

Age, years	Expectation of Life in Years					Mortality Rate per 1,000				
	Total Persons	White		Nonwhite		Total Persons	White		Nonwhite	
		Male	Female	Male	Female		Male	Female	Male	Female
16.....	56.1	53.8	59.7	49.2	53.4	.9	1.1	.5	1.3	.7
17.....	55.1	52.9	58.7	48.2	52.4	1.0	1.3	.5	1.5	.9
18.....	54.2	51.9	57.7	47.3	51.5	1.1	1.4	.6	1.8	1.0
19.....	53.2	51.0	56.8	46.4	50.5	1.1	1.6	.6	2.1	1.2
20.....	52.3	50.1	55.8	45.5	49.6	1.2	1.7	.6	2.5	1.4
21.....	51.3	49.3	54.9	44.7	48.7	1.3	1.8	.6	2.8	1.5
22.....	50.4	48.3	53.9	43.8	47.7	1.4	1.9	.6	3.1	1.7
23.....	49.5	47.4	52.9	42.9	46.8	1.4	1.8	.7	3.3	1.8
24.....	48.5	46.5	52.0	42.1	45.9	1.4	1.8	.7	3.4	1.9
25.....	47.6	45.6	51.0	41.2	45.0	1.3	1.7	.7	3.5	2.0
26.....	46.7	44.6	50.1	40.3	44.1	1.3	1.6	.7	3.7	2.1
27.....	45.7	43.7	49.1	39.5	43.2	1.3	1.6	.7	3.8	2.2
28.....	44.8	42.8	48.1	38.6	42.3	1.4	1.6	.8	3.8	2.4
29.....	43.8	41.8	47.2	37.8	41.4	1.4	1.6	.8	3.9	2.6
30.....	42.9	40.9	46.2	36.9	40.5	1.5	1.6	.9	3.9	2.7
31.....	42.0	40.0	45.2	36.0	39.6	1.5	1.6	.9	3.9	2.9
32.....	41.1	39.1	44.3	35.1	38.7	1.6	1.7	1.0	4.1	3.2
33.....	40.2	38.2	43.3	34.3	37.8	1.7	1.8	1.1	4.5	3.6
34.....	39.2	37.2	42.4	33.4	37.0	1.9	2.0	1.2	4.9	4.0
35.....	38.3	36.3	41.4	32.6	36.1	2.0	2.2	1.3	5.5	4.5
36.....	37.3	35.3	40.4	31.8	35.3	2.2	2.4	1.4	6.1	4.9
37.....	36.4	34.4	39.5	31.0	34.5	2.4	2.6	1.6	6.6	5.3
38.....	35.5	33.5	38.6	30.2	33.6	2.6	2.8	1.7	7.0	5.5
39.....	34.6	32.6	37.6	29.4	32.8	2.8	3.1	1.8	7.3	5.6
40.....	33.7	31.7	36.7	28.6	32.0	3.1	3.4	2.0	7.6	5.7
41.....	32.8	30.8	35.8	27.9	31.1	3.4	3.7	2.2	8.0	5.9
42.....	31.9	29.9	34.8	27.1	30.3	3.7	4.1	2.4	8.5	6.3
43.....	31.0	29.0	33.9	26.3	29.5	4.0	4.6	2.6	9.2	6.9
44.....	30.2	28.2	33.0	25.5	28.7	4.5	5.1	2.9	10.0	7.6
45.....	29.3	27.3	32.1	24.8	27.9	4.9	5.7	3.1	10.9	8.5
46.....	28.4	26.5	31.2	24.1	27.2	5.4	6.3	3.4	11.8	9.3
47.....	27.6	25.6	30.3	23.4	26.4	5.9	7.0	3.7	12.8	10.3
48.....	26.7	24.8	29.5	22.7	25.7	6.5	7.7	4.0	13.9	11.2
49.....	25.9	24.0	28.6	22.0	25.0	7.1	8.6	4.4	15.0	12.2
50.....	25.1	23.2	27.7	21.3	24.3	7.8	9.4	4.7	16.3	13.2
51.....	24.3	22.4	26.8	20.6	23.6	8.6	10.4	5.2	17.6	14.4
52.....	23.5	21.6	25.9	19.9	22.9	9.3	11.4	5.6	19.0	15.4
53.....	22.7	20.9	25.1	19.3	22.3	10.1	12.4	6.1	20.4	16.5
54.....	22.0	20.1	24.2	18.7	21.6	10.9	13.5	6.6	21.8	17.5
55.....	21.2	19.4	23.4	18.1	21.0	11.7	14.6	7.2	23.4	18.6
56.....	20.4	18.7	22.5	17.5	20.4	12.7	15.8	7.8	25.1	19.8
57.....	19.7	18.0	21.7	17.0	19.8	13.8	17.2	8.5	26.9	21.0
58.....	18.9	17.3	20.9	16.4	19.2	14.9	18.8	9.4	28.7	22.1
59.....	18.2	16.7	20.1	15.9	18.7	16.3	20.6	10.3	30.6	23.2
60.....	17.5	16.0	19.3	15.4	18.1	17.6	22.4	11.3	32.5	24.1
61.....	16.8	15.3	18.5	15.0	17.6	19.1	24.4	12.4	34.5	25.2
62.....	16.1	14.7	17.7	14.5	17.0	20.9	26.6	13.8	37.1	27.1
63.....	15.5	14.1	17.0	14.0	16.5	23.0	29.0	15.5	40.3	30.0
64.....	14.8	13.5	16.2	13.6	16.0	25.4	31.7	17.5	44.2	33.7
65.....	14.2	12.9	15.5	13.2	15.5	28.1	34.6	19.7	48.5	38.1
66.....	13.6	12.4	14.8	12.8	15.1	30.9	37.7	22.1	53.0	42.5
67.....	13.0	11.8	14.1	12.5	14.7	33.6	40.8	24.3	56.8	45.8
68.....	12.4	11.3	13.5	12.2	14.4	36.0	43.7	26.5	59.6	47.6
69.....	11.8	10.8	12.8	12.0	14.1	38.3	46.6	28.5	61.4	47.9

Expectation of Life in the United States, 1850-1955

Source: Statistical Bulletin of the Metropolitan Life Insurance Company. Compiled from various publications of the National Office of Vital Statistics and the Bureau of the Census.

Calendar period	Age								
	0	10	20	30	40	50	60	70	80
White Males									
1850*	38.3	48.0	40.1	34.0	27.9	21.6	15.6	10.2	5.9
1890*	42.50	48.45	40.66	34.05	27.37	20.72	14.73	9.35	5.40
1900-1902†	48.23	50.59	42.19	34.88	27.74	20.76	14.35	9.03	5.10
1901-1910†	49.32	50.86	42.39	34.80	27.55	20.59	14.17	8.96	5.07
1909-1911†	50.23	51.32	42.71	34.87	27.43	20.39	13.98	8.83	5.09
1919-1921†	56.34	54.15	45.60	37.65	29.86	22.22	15.25	9.51	5.47
1920-1929‡	57.85	54.65	45.84	37.51	29.35	21.65	14.75	9.17	5.26
1929-1931	59.12	54.96	46.02	37.54	29.22	21.51	14.72	9.20	5.26
1930-1939	60.62	55.86	46.77	38.06	29.57	21.71	14.86	9.29	5.30
1939-1941	62.81	57.03	47.76	38.80	30.03	21.96	15.05	9.42	5.38
1949-1951	66.31	58.98	49.52	40.29	31.17	22.83	15.76	10.07	5.88
1955	67.3	59.6	50.1	40.9	31.7	23.2	16.0	10.3	6.1
White Females									
1850*	40.5	47.2	40.2	35.4	29.8	23.5	17.0	11.3	6.4
1890*	44.46	49.62	42.03	35.36	28.76	22.09	15.70	10.15	5.75
1900-1902†	51.08	52.15	43.77	36.42	29.17	21.89	15.23	9.59	5.50
1901-1910†	52.54	52.89	44.39	36.75	29.28	21.86	15.09	9.52	5.43
1909-1911†	53.62	53.57	44.88	36.96	29.26	21.74	14.92	9.38	5.35
1919-1921†	58.53	55.17	46.46	38.72	30.94	23.12	15.93	9.94	5.70
1920-1929‡	60.62	56.41	47.46	39.20	30.97	22.97	15.70	9.71	5.46
1929-1931	62.67	57.65	48.52	39.99	31.52	23.41	16.05	9.98	5.63
1930-1939	64.52	58.98	49.71	40.90	32.24	23.98	16.44	10.19	5.76
1939-1941	67.29	60.85	51.38	42.21	33.25	24.72	17.00	10.50	5.88
1949-1951	72.03	64.26	54.56	45.00	35.64	26.76	18.64	11.68	6.59
1955	73.6	65.6	55.8	46.2	36.7	27.7	19.3	12.2	6.7
Nonwhite Males§									
1900-1902†	32.54	41.90	35.11	29.25	23.12	17.34	12.62	8.33	5.12
1901-1910†	32.57	40.73	33.78	27.97	22.23	16.64	11.87	8.29	5.43
1909-1911†	34.05	40.65	33.46	27.33	21.57	16.21	11.67	8.00	5.53
1919-1921†	47.14	45.99	38.36	32.51	26.53	20.47	14.74	9.58	5.83
1920-1929‡	46.90	44.86	36.76	30.65	24.55	18.83	13.66	9.12	5.54
1929-1931	47.55	44.27	35.95	29.45	23.36	17.92	13.15	8.78	5.42
1930-1939	50.06	46.56	38.05	31.11	24.65	18.98	14.13	9.53	6.01
1939-1941	52.26	48.34	39.52	32.05	25.06	19.06	14.37	10.11	6.58
1949-1951	58.91	52.96	43.73	35.31	27.29	20.25	14.91	10.74	7.07
1955	61.2	54.9	45.5	36.9	28.6	21.3	15.4	11.7	8.9
Nonwhite Females§									
1900-1902†	35.04	43.02	36.89	30.70	24.37	18.67	13.60	9.62	6.48
1901-1910†	35.65	42.52	36.17	30.09	23.81	18.08	13.17	9.52	6.50
1909-1911†	37.67	42.84	36.14	29.61	23.34	17.65	12.78	9.22	6.05
1919-1921†	46.92	44.54	37.15	31.48	25.60	19.76	14.69	10.25	6.58
1920-1929‡	47.95	44.86	36.98	30.93	24.67	18.85	14.01	10.01	6.49
1929-1931	49.51	45.33	37.22	30.67	24.30	18.60	14.22	10.38	6.90
1930-1939	52.62	48.29	39.90	32.88	26.11	20.09	15.28	10.88	7.18
1939-1941	55.56	50.75	42.04	34.40	27.19	20.95	16.10	11.82	8.02
1949-1951	62.70	56.17	46.77	38.02	29.82	22.67	16.95	12.29	8.15
1955	65.9	59.2	49.6	40.5	32.0	24.3	18.1	13.8	10.1

* Massachusetts only; white and nonwhite combined, the latter being about one percent of the total. † Original Death Registration States. ‡ Death Registration States of 1920. § Data for periods 1900-1902 to 1929-1931 and 1939-1941 relate to Negroes only.

Expectation of Life by Age and Sex; Selected Countries

Source: Statistical Office of the United Nations; "Population Index" published by the Office of Population Research, Princeton University, and the Population Association of America; and The U. S. Public Health Service.

Country	Period	Average future lifetime in years at stated age											
		Males						Females					
		0	1	10	20	40	60	0	1	10	20	40	60
North America													
United States													
White	1954	67.4	68.3	59.8	50.3	31.8	16.2	73.6	74.2	65.6	55.9	36.7	19.4
Nonwhite	1954	61.0	63.1	54.8	45.5	28.7	15.7	65.8	67.4	59.1	49.5	31.9	18.3
Canada	1950-52	66.3	68.3	60.2	50.8	32.5	16.5	70.8	72.3	64.0	54.4	35.6	18.6
Mexico	1940	37.9	44.4	45.4	37.6	24.8	13.4	39.8	46.2	47.9	40.0	26.6	13.5
Puerto Rico	1939-41	45.1	50.4	48.6	40.1	*	*	46.9	51.5	50.0	41.8	*	*
South America													
Chile	1952	49.8	56.8	51.4	42.7	27.3	14.0	53.9	60.6	55.7	47.1	31.3	16.4
Venezuela	1941-42	45.8	51.2	48.2	39.9	26.2	14.0	47.6	52.5	49.7	41.6	28.5	15.8
Europe													
Austria	1949-51	61.9	65.9	58.0	48.7	30.7	15.1	67.0	70.1	62.2	52.6	34.2	17.3
Belgium	1946-49	62.0	65.3	57.4	48.0	30.6	15.5	67.3	69.7	61.7	52.3	34.2	17.5
Czechoslovakia	1929-32	51.9	59.9	54.0	45.3	29.0	14.4	55.2	62.0	56.1	47.4	31.0	15.4
Denmark	1946-50	67.8	70.0	61.7	52.2	33.8	17.1	70.1	71.7	63.3	53.6	35.0	17.9
England and Wales	1954	67.6	68.6	60.0	50.4	31.5	15.1	73.1	73.7	65.0	55.3	36.2	18.8
Finland	1951-53	62.9	64.3	56.2	46.7	28.9	13.9	69.1	70.4	62.1	52.5	33.9	16.8
France	1950-51	63.6	66.1	57.9	48.4	30.4	15.1	69.3	71.2	63.0	53.4	35.0	18.1
Germany (Fed. Rep.)	1949-51	64.6	67.8	59.8	50.3	32.3	16.2	68.5	71.0	62.8	53.2	34.7	17.5
Greece	1926-30	49.1	53.2	52.4	44.3	29.8	16.0	50.9	55.1	54.5	46.4	32.4	17.5
Hungary	1955 ¹	64.7	68.3	60.1	50.6	32.3	15.9	68.7	71.4	63.2	53.5	34.7	17.5
Iceland	1931-40	60.9	63.0	55.9	47.3	32.0	16.6	65.6	67.2	59.9	51.1	35.4	19.1
Ireland	1945-47	60.5	64.4	56.9	47.8	30.6	15.1	62.4	65.5	57.9	48.8	32.1	16.4
Italy	1930-32 ²	53.8	59.7	55.5	46.8	30.4	15.2	57.5	62.6	57.9	49.1	32.3	16.2
Netherlands	1950-52	70.6	71.6	63.4	53.7	34.9	17.8	72.9	73.5	65.1	55.4	36.3	18.6
Norway	1946-50	69.3	70.7	62.6	53.3	35.2	18.4	72.7	73.6	65.2	55.6	37.0	19.5
Poland	1948	55.6	62.5	55.7	46.8	30.2	15.3	62.5	67.4	60.7	51.6	34.2	17.7
Portugal	1949-52	55.5	61.0	56.1	47.0	30.3	15.1	60.5	65.6	61.0	51.8	34.5	17.7
Scotland	1955	65.8	67.0	58.6	49.0	30.3	14.5	70.6	71.6	63.0	53.3	34.4	17.3
Spain	1940	47.1	52.4	48.6	40.0	25.4	12.4	53.2	58.8	55.5	47.0	30.7	15.2
Sweden	1946-50	69.0	69.9	61.6	52.1	33.8	17.1	71.6	72.1	63.6	54.0	35.3	18.0
Switzerland	1948-53	66.4	67.8	59.6	50.2	31.9	15.7	70.9	71.9	63.6	53.9	35.0	17.8
U.S.S.R. (Europe)	1926-27	41.9	51.4	51.7	43.2	28.0	14.9	46.8	55.5	55.7	47.4	32.1	17.1
Asia													
Formosa	1935-40	41.1	47.6	45.6	37.2	22.7	11.3	45.7	51.5	50.8	42.4	27.7	14.2
India	1941-50	32.5	39.0	39.0	33.0	20.5	10.1	31.7	37.3	39.5	32.9	21.1	11.3
Israel (Jews)	1955	69.4	71.0	62.7	53.2	34.4	17.3	72.1	73.4	65.1	55.3	36.3	18.9
Japan	1955	63.9	65.6	58.2	48.8	31.2	15.3	68.4	70.0	62.5	53.0	35.1	18.6
Korea	1938	47.2	51.1	49.9	41.6	26.2	12.8	50.6	54.5	53.2	45.1	30.0	14.8
Thailand	1947-48	48.7	52.0	47.9	39.8	25.6	12.7	51.9	55.2	50.9	42.7	28.4	14.2
Africa													
Egypt	1936-38	35.7	42.1	46.9	39.8	26.1	13.3	41.5	48.1	54.5	46.1	30.8	16.3
U. of So. Af. (Europeans)	1945-47	63.8	65.5	57.7	48.4	30.4	15.3	68.3	69.6	61.7	52.3	34.1	18.0
Oceania													
Australia	1946-48	66.1	67.3	59.0	49.6	31.2	15.4	70.6	71.5	63.1	53.5	34.9	18.1
New Zealand (Europeans)	1950-52	68.3	69.0	60.6	51.2	32.7	16.2	72.4	72.9	64.4	54.6	35.6	18.5

* Not available. ¹ Provisional. ² Figures given for females cover period 1935-37.

CRIME

Distribution of Arrests by Sex, 1956

Source: Federal Bureau of Investigation.

(Data in this table are from reports furnished the FBI by 1,551 cities over 2,500 in population. This represents about 42% of the urban population of the U. S.)

Offense charged	Males	Per cent	Females	Per cent	Total	Per cent
Criminal homicide:						
Murder & nonnegligent manslaughter.....	1,631	.1	397	.2	2,028	.1
Manslaughter by negligence.....	1,307	.1	113	.1	1,420	.1
Robbery.....	10,448	.6	465	.2	10,913	.5
Aggravated assault.....	19,578	1.1	4,182	1.8	23,760	1.1
Other assaults.....	71,576	3.9	8,432	3.7	80,008	3.9
Burglary—breaking or entering.....	45,329	2.5	1,077	.5	46,406	2.2
Larceny—theft.....	80,575	4.4	11,619	5.1	92,194	4.5
Auto theft.....	27,323	1.5	712	.3	28,035	1.4
Embezzlement and fraud.....	11,574	.6	2,120	.9	13,694	.7
Stolen property; buying, receiving, etc.....	4,995	.3	726	.3	5,721	.3
Forgery and counterfeiting.....	7,536	.4	1,500	.7	9,036	.4
Rape.....	4,591	.2	.....	.....	4,591	.2
Prostitution and commercialized vice.....	5,424	.3	9,195	4.1	14,619	.7
Other sex offenses.....	14,848	.8	4,749	2.1	19,597	.9
Narcotic drug laws.....	6,104	.3	1,185	.5	7,289	.4
Weapons; carrying, possessing, etc.....	15,286	.8	893	.4	16,179	.8
Offenses against family and children.....	20,345	1.1	2,034	.9	22,379	1.1
Liquor laws.....	35,421	1.9	8,050	3.6	43,471	2.1
Driving while intoxicated.....	100,391	5.4	4,534	2.0	104,925	5.1
Disorderly conduct.....	202,617	11.0	38,550	17.0	241,167	11.6
Drunkenness.....	775,536	41.9	66,879	29.6	842,415	40.6
Vagrancy.....	67,601	3.7	7,877	3.5	75,478	3.6
Gambling.....	40,142	2.2	4,764	2.1	44,906	2.2
Suspicion.....	75,006	4.1	9,057	4.0	84,063	4.1
All other offenses.....	199,498	10.8	37,002	16.4	236,500	11.4
TOTAL ARRESTS, 1956.....	1,844,682	100.0	226,112	100.0	2,070,794	100.0

Arrests by Age Groups, 1956¹

Source: Federal Bureau of Investigation.

Age	Arrests	Age	Arrests	Age	Arrests	Age	Arrests	Age	Arrests
Under 15.....	94,074	18.....	48,598	22.....	50,343	30-34.....	255,848	50 & over...	340,435
15.....	42,525	19.....	45,443	23.....	50,448	35-39.....	245,421	Not known...	565
16.....	50,114	20.....	42,947	24.....	51,807	40-44.....	220,651	TOTAL.....	2,070,794
17.....	47,761	21.....	51,831	25-29.....	244,521	45-49.....	187,462		

¹ Data from same source as table above: 1,551 cities over 2,500.Estimated Number of Major Crimes in the U. S., 1948-56¹

Source: Federal Bureau of Investigation.

Crime	1948	1950	1952	1954	1955	1956
Murder and nonnegligent manslaughter.....	7,620	7,020	7,210	6,850	6,850	6,970
Manslaughter by negligence.....	5,390	5,330	5,650	5,410	5,610	5,650
Rape.....	16,180	16,580	17,240	18,030	19,100	20,300
Robbery.....	54,990	53,230	58,140	67,420	57,490	56,770
Aggravated assault.....	77,310	80,950	87,930	93,540	92,740	96,430
Burglary—breaking or entering.....	377,640	411,980	442,760	519,190	492,530	525,720
Larceny—theft.....	978,000	1,044,160	1,202,270	1,340,870	1,360,980	1,587,590
Auto theft.....	169,540	170,780	215,310	215,940	227,150	263,720
Total major crimes.....	1,686,670	1,790,030	2,036,510	2,267,250	2,262,450	2,563,150

¹ Estimated total major crimes, both urban and rural.

Sentenced Federal Prisoners Received from Courts, 1940-1956

Fiscal years ending June 30

Source: Federal Bureau of Prisons.

Offense	1940	1945	1948	1950	1952	1954	1955	1956
Counterfeiting*	....	47	64	260	154	88	96	54
Drug laws: Marihuana	550	454	588	878	654	509	457	325
Narcotics	1,700	680	855	1,151	1,278	1,366	1,237	1,189
Embezzlement and fraud	750	340	531	609	558	445	487	453
Forgery*	1,589	626	954	1,274	1,099	1,484	1,618	1,572
Immigration laws	2,270	3,996	3,200	3,463	4,548	7,277	4,952	1,771
Income tax†	....	15	103	164	184	203	237	241
Juvenile delinquency	216	911	677	658	695	829	734	825
Kidnaping	37	20	36	41	42	41	37	19
Liquor laws	10,735	2,988	1,838	2,304	2,247	2,143	2,294	2,183
Robbery	....	45	68	92	120	193	252	212
Theft from interstate commerce	313	475	430	270	307	320	342	318
Transportation, etc., of stolen motor vehicle	1,512	1,072	2,612	2,486	2,605	2,838	2,989	2,835
White-slave traffic	378	209	221	185	173	242	240	206
Govt. reservation, D. C., high seas and terr. cases	1,021	986	1,069	1,145	1,369	1,487	1,458	1,365
Other	1,719	1,742	1,795	2,031	1,917	1,750	1,891	1,882
National-security offenses:								
Selective Service Acts	....	2,613	236	136	281	342	214	136
Other national-defense and security laws	11	2,150	319	130	157	167	152	132
Military court-martial cases: Army	45	1,793	851	606	416	639	219	952
Navy	....	32	267	107	48	33	25	30
TOTAL ALL OFFENSES	23,003	21,200	16,787	18,063	18,896	22,497	20,013	16,700

* Commitments for counterfeiting classified with forgery in 1940. † Commitments for income-tax violation not classified separately in 1940.

Methods of Execution in the United States

Source: Information Please Almanac questionnaires to the states.

State	Method	State	Method
Alabama	Electrocution	New Mexico	Lethal gas
Arizona	Lethal gas	New York	Electrocution
Arkansas	Electrocution	North Carolina	Lethal gas
California	Lethal gas	North Dakota	No death penalty
Colorado	Lethal gas	Ohio	Electrocution
Connecticut	Electrocution	Oklahoma	Lethal gas ¹
Delaware	Hanging	Oregon	Lethal gas ²
D. C.	Electrocution	Pennsylvania	Electrocution
Florida	Electrocution	Rhode Island	No death penalty
Georgia	Electrocution	South Carolina	Electrocution
Idaho	Hanging	South Dakota	Electrocution
Illinois	Electrocution	Tennessee	Electrocution
Indiana	Electrocution	Texas	Electrocution
Iowa	Hanging	Utah	Hanging
Kansas	Hanging		or shooting ³
Kentucky	Electrocution	Vermont	Electrocution
Louisiana	Electrocution	Virginia	Electrocution
Maine	No death penalty	Washington	Hanging
Maryland	Lethal gas	West Virginia	Electrocution
Massachusetts	Electrocution	Wisconsin	No death penalty
Michigan	No death penalty	Wyoming	Lethal gas
Minnesota	No death penalty	U. S. (Fed. Gov't.)	(⁴)
Mississippi	Lethal gas	Alaska	No death penalty
Missouri	Lethal gas	American Samoa	Hanging
Montana	Hanging	Canal Zone	Hanging
Nebraska	Electrocution	Guam	Hanging
Nevada	Lethal gas	Hawaii	No death penalty
New Hampshire	Hanging	Puerto Rico	No death penalty
New Jersey	Electrocution	Virgin Islands	Hanging ⁵

¹ Electrocution until gas chamber is provided. ² A measure to abolish death sentence will be voted on in the next general election. ³ Condemned man has choice. ⁴ Method shall be that used by state in which sentence is imposed. ⁵ In St. Croix only. NOTE: Method shown with each state is maximum penalty for murder and certain other crimes. In most states having capital punishment, jury or judge can specify whether sentence shall be death or life imprisonment.

EDUCATION

Elementary and Secondary Public School Statistics, 1955-56

Source: Information Please Almanac Questionnaire.

Note: The number of schools includes rural and one-room school houses. The number of pupils includes only full-time students. The average yearly expenditure is based on the average daily attendance.

State	Elementary (Kindergarten through Grade 8)			Secondary (Grades 9-12)			Average yearly expenditure per pupil	Average yearly salary of teachers
	No. schools	No. pupils	No. teachers	No. schools	No. pupils	No. teachers		
Alabama ¹	1,404	450,840	13,939	1,277 ²	282,552	10,546	\$164.34	\$3,287.00
Arizona.....	447	167,387	5,915	82	42,856	1,892	381.59	4,410.86
Arkansas.....	1,563 ³	262,012	7,825	680 ³	156,697	5,736	136.00 ⁴	2,328.00
California.....	4,165	1,916,668	55,006	722	531,362	29,192	319.92	4,863.00 ⁵
Colorado ³	1,213	237,598	7,554	369	64,786	5,056	302.29	3,954.00
Connecticut ¹	757	292,228	9,964	137	107,323	5,274	288.20	4,463.00
Delaware ¹	142 ⁶	39,536	1,484	48 ⁶	24,854	1,203	356.47	4,544.00
D. C. ¹	125	67,845	1,933	41	38,456	1,766	340.59	5,341.00
Florida ¹	1,257	474,165	15,076	472	281,228	11,163	242.69 ⁴	4,055.59
Georgia.....	1,303	678,866	19,572	1,177	238,399	10,115	175.05	3,127.45
Idaho.....	478	107,942	3,068	176	37,152	2,048	229.74 ⁴	3,504.00
Illinois.....	4,345	1,180,337	39,940	897	357,415	17,005	312.97	4,802.07
Indiana ⁷	2,189 ⁸	660,329	21,401 ⁸	847 ⁸	206,935	18,114 ⁹	276.55	4,373.30
Iowa.....	5,520	421,300	17,030	827	129,487	8,661	285.50	3,536.00
Kansas.....	2,762	335,263	13,005	596	99,397	5,606	297.28	3,557.00
Kentucky.....	3,572	484,420	14,482	496 ¹⁰	121,068	7,018	170.00	2,500.00
Louisiana.....	1,013	457,119	7,974	572 ¹¹	116,093	12,469 ¹¹	251.21	3,811.54 ¹¹
Maine ¹²	1,344	138,822	4,970	170	38,148	1,980	209.97	3,034.00
Maryland ¹	790 ¹³	305,983	9,997	235 ¹³	175,738	7,856	285.26	4,360.00
Massachusetts.....	1,821 ¹⁴	507,829	7,668 ¹⁵	430 ¹⁴	240,918	11,547 ¹⁵	293.28	4,370.15 ¹⁵
Michigan.....	2,459	901,687	29,573	1,036	483,272	18,857	322.14	4,900.00
Minnesota.....	3,366	374,455	13,811	658	228,075 ¹⁶	11,362	331.00	4,100.00
Mississippi.....	769	449,576	10,714	454	96,418	5,984	145.69	2,402.00
Missouri.....	2,298	574,727	18,863	586	167,729	7,317	255.43 ⁴	3,435.00
Montana.....	987	96,752	4,361	176	31,531	1,761	451.94 ¹⁷	4,080.00
Nebraska.....	4,126	185,779	9,402	462	73,381	4,190	276.75	3,353.00 ¹⁸
Nevada.....	198	47,537	1,406	36	10,945	495	488.15	4,380.00
New Hampshire ¹⁸	450	66,538	2,406	82	19,892	1,085	260.33	3,310.00
New Jersey.....	3,200	706,747	25,584	203	185,773	8,457	356.19	4,641.70
New Mexico.....	913	145,767	5,141	109	38,269	1,608	389.91	4,389.00
New York ¹	3,784	1,521,366	56,675 ²²	1,352	946,560	44,530 ²²	417.13	5,192.14
North Carolina.....	2,157	800,874	24,691	920	222,873	8,700	171.54 ¹⁸	3,269.00 ¹⁸
North Dakota.....	2,467 ¹⁹	94,961	5,065	372 ¹⁹	30,727	1,863	281.39 ¹⁷	3,043.39 ²⁰
Ohio ²¹	3,637	1,292,604	45,017	1,138	537,250	23,620	277.96	4,200.65
Oklahoma.....	2,229	317,829	10,453	971 ²²	184,520 ²²	7,239	239.73	3,768.00
Oregon.....	1,085	255,826	10,691	224	82,838	4,216	343.86	4,292.00
Pennsylvania.....	5,248	1,107,406 ²³	34,296 ²³	1,045	675,231 ²³	27,283 ²³	341.37 ²⁴	4,146.00
Rhode Island.....	292	77,788	2,815	61	39,519	1,987	326.51	4,200.00
South Carolina ²⁵	1,308	396,424	11,960	395	166,820	6,705	184.00 ⁴	2,956.00
South Dakota.....	3,189	104,598	5,672	270	32,465	2,107	312.34 ⁴	(²⁶)
Tennessee.....	(²⁷)	597,020	(²⁷)	(²⁷)	157,925	(²⁷)	170.72	3,051.50
Texas.....	4,049	1,372,579	41,345	1,796	372,768	20,895	258.39	3,846.00
Utah.....	387	122,493	3,606	147	76,146	2,646	213.64 ⁴	3,859.61
Vermont ²⁸	625	49,034	1,963 ²⁹	82	18,654	904 ²⁹	236.47	3,323.72
Virginia.....	2,109	539,725	17,456	474	211,288	10,051	200.90	3,298.00
Washington.....	1,124	343,496	11,416	407	165,800	6,617	308.83	4,489.33
West Virginia.....	3,090	295,905	10,352	380	162,003	6,368	182.70	3,086.19
Wisconsin.....	4,639	446,129	16,937	442	164,698	7,828	280.72 ¹⁸	3,819.00 ¹⁸
Wyoming.....	543	53,823	2,483	85	16,188	1,140	385.33	4,147.00

¹ Elementary grades, 1-6; secondary grades, 7-12. ² Includes combined elementary-secondary schools. Total of all schools is 2,681. ³ Includes 284 combined schools. ⁴ Current, non-capital expense. ⁵ Median salary. ⁶ Includes combined schools; total is 157. ⁷ 1956-57. ⁸ Includes 634 combined schools; total is 2,402. ⁹ Includes 9,142 teachers in combined schools. ¹⁰ Includes 353 combined schools. ¹¹ Includes 480 combined schools and their 9,384 teachers. Teacher totals and salaries include principals. ¹² 1954-55 figures, except salary. ¹³ Total schools is 952, of which 73 are combined. ¹⁴ Includes 100 combined. ¹⁵ Includes supervisors and principals. ¹⁶ Includes some 7th and 8th superintendents. ¹⁷ Includes capital expense. ¹⁸ 1954-55. ¹⁹ Approximate; state has 2,221 one-room schools. ²⁰ Includes by others as secondary. ²¹ Fall 1956. ²² Includes junior highs. ²³ Grades 7 and 8 are classified by some districts as elementary. ²⁴ \$2,342 (av.); elementary, \$2,650 (median); high school, \$3,450 (median). ²⁵ Includes 6-6, 7-5 and 8-4 systems. ²⁶ Rural, 26,051. ²⁷ Enrollment, teachers and salary are for 1956-57. ²⁸ Plus 156 special teachers. ²⁹ 1953-54. ³⁰ School districts. ³¹ Estimated.

State Compulsory School Attendance Laws

Source: U. S. Office of Education.

State	Enactment*	Age limits	State	Enactment*	Age limits
Alabama	1915	7-16	Nebraska	1887	7-16
Arizona	1899	8-16	Nevada	1873	7-18
Arkansas	1909	7-16	New Hampshire ...	1871	6-16
California	1874	8-16	New Jersey	1875	7-16
Colorado	1889	8-16	New Mexico	1891	6-17
Connecticut	1872	7-16	New York	1874	7-16
Delaware	1907	7-16	North Carolina ...	1907	7-16
D. C.	1864	7-16	North Dakota	1883	7-17
Florida	1915	7-16	Ohio	1877	6-18
Georgia	1916	7-16	Oklahoma	1907	7-18
Idaho	1887	7-16	Oregon	1889	7-18
Illinois	1883	7-16	Pennsylvania	1895	8-17
Indiana	1897	7-16	Rhode Island	1883	7-16
Iowa	1902	7-16	South Carolina	1915	7-16
Kansas	1874	7-16	South Dakota	1883	7-16
Kentucky	1896	7-16	Tennessee	1905	7-17
Louisiana	1910	7-16	Texas	1915†	7-16
Maine	1875	7-16	Utah	1890	6-18
Maryland	1902	7-16	Vermont	1867	7-16
Massachusetts	1852	7-16	Virginia	1908	7-16
Michigan	1871	6-16	Washington	1871	8-16
Minnesota	1885	7-16	West Virginia	1897	7-16
Mississippi	1918	7-16	Wisconsin	1879	7-16
Missouri	1905	7-16	Wyoming	1876	7-16
Montana	1883	8-16			

* Date of enactment of 1st compulsory school attendance law. † A compulsory school attendance law was contained in a law of 1873 establishing free public schools. However, the provision was omitted in superseding legislation passed in 1876.

Enrollment in Full-time Day Schools, 1909-56

Source: U. S. Office of Education.

Type of school	1909-1910	1919-1920	1929-1930	1939-1940	1949-1950	1953-1954
Kindergartens: Public.....	293,970	481,266	723,443	594,647	1,034,203	1,474,000
Nonpublic	52,219 ¹	29,683	54,456	57,341	133,000	317,000
Residential schools for exceptional children..	(?)	(?)	5,164 ²	5,777	4,459 ³	8,000 ⁴
Elementary schools: Public.....	16,604,821	18,897,661	20,555,150	18,237,451	18,370,490	21,071,800
Nonpublic	1,506,218	1,455,878	2,255,430	2,005,938	2,574,777 ⁵	3,274,840
Residential schools for exceptional children..	71,307	99,234 ⁶	124,153 ⁷	55,954	48,894 ⁸	53,900 ⁹
Other ⁷	(?)	(?)	(?)	59,547	35,682	57,403
Total kindergartens and elementary schools ...	18,528,535	20,963,722	23,717,796	21,106,655	22,201,505	26,256,943
Secondary schools: Public high schools.....	915,061	2,200,389	4,399,422	6,601,444	5,706,734	6,290,245
Nonpublic high schools.....	117,400	213,920	341,158	457,768	672,362 ⁹	747,323
Residential schools for exceptional children..	4,005	4,500 ¹	4,388	9,727	9,784 ²	11,200 ³
Other ⁷	78,932	81,367	59,287	54,070	38,162	49,457
Total secondary schools.....	1,115,398	2,500,176	4,804,255	7,123,009	6,427,042	7,098,225
Higher education: Publicly controlled ⁴	116,560	315,382	532,647	796,531	1,354,902	1,356,481
Privately controlled ⁵	188,655	282,498	568,090	697,672	1,304,119	1,158,231
Total higher education.....	355,215	597,880	1,100,737	1,494,203	2,659,021	2,514,712

¹ 1911-12. ² Data not available. ³ 1926-27. ⁴ 1917-18. ⁵ Distribution by control estimated before 1939-40. ⁶ Elementary grades in college and teacher-training elementary schools. ⁷ Secondary grades in college and teacher-training secondary schools. ⁸ 1945-46. ⁹ Estimated.

Statistics of State School Systems, 1942-54

Source: U. S. Office of Education.

Years	Enrollment						High-school graduates		Current expenditure per pupil in average daily attendance	Expenditure for textbooks free to pupils
	Total	Elementary schools		Secondary schools						
		Boys	Girls	Boys	Girls	Boys	Girls			
1942-1943. . . .	24,155,146	9,237,002	8,796,078	2,891,633	3,230,433	489,115	597,383	104.85	27,090,248	
1943-1944. . . .	23,266,616	9,081,270	8,631,826	2,553,356	3,000,164	393,418	559,836	116.99	23,987,277	
1945-1946. . . .	23,299,941	9,098,013	8,579,731	2,633,117	2,989,080	418,725	555,682	136.41	27,447,595	
1946-1947. . . .	23,659,158	9,187,105	8,634,376	2,822,633	3,015,044	505,218	568,461	152.80	29,805,963	
1947-1948. . . .	23,944,532	9,429,268	8,861,959	2,747,061	2,906,244	507,649	565,529	179.43	37,553,364	
1948-1949. . . .	24,476,658	9,707,391	9,110,863	2,759,298	2,899,106	499,984	557,960	197.65	43,481,000	
1949-1950. . . .	25,111,000	10,018,000	9,387,000	2,812,000	2,895,000	505,394	558,050	208.83	48,076,000	
1951-1952. . . .	26,563,000	10,649,000	10,032,000	2,885,000	2,997,000	501,723	553,863	244.24	53,677,000	
1953-1954* . . .	28,836,000	11,609,000	10,937,000	3,085,000	3,205,000	544,575	584,966	264.76	72,660,000	

* Data not available for 1952-53; number of boys and girls in elementary schools in 1953-54 are estimated from total enrollment.

Federal Government Funds for Education, Fiscal Year 1954-55

Source: U. S. Office of Education.

Classification of programs by department or other agency	Amount	Classification of programs by department or other agency	Amount
Programs for elementary & secondary schools \$	536,986,000	Programs for training other persons.....	\$762,689,000
Department of Agriculture.....	186,374,000	Department of Defense.....	9,325,000
Department of Defense.....	16,421,000	Department of Health, Education & Welfare.....	38,133,000
Department of the Interior.....	75,919,000	Department of the Interior.....	981,000
Department of Health, Education & Welfare.....	245,800,000	Department of Justice.....	461,000
Department of the Treasury.....	13,000	Department of Labor.....	3,160,000
Atomic Energy Commission.....	3,651,000	Department of the Treasury.....	545,000
Canal Zone.....	3,015,000	Veterans Administration.....	710,084,000
District of Columbia.....	5,185,000	Programs for research, fellowships & educational services.....	94,258,000
White House Conference on Education.....	608,000	Department of Agriculture.....	59,709,000
Programs for colleges and universities.....	153,056,000	Department of Health, Education & Welfare.....	5,487,000
Department of Health, Education & Welfare.....	153,056,000	Atomic Energy Commission.....	19,080,000
Programs for training personnel for defense activities.....	27,135,000	National Science Foundation.....	9,982,000
Department of Commerce.....	2,593,000	Programs for International Education.....	42,530,000
Department of Defense.....	22,049,000	Department of Commerce.....	244,000
Department of the Treasury.....	2,493,000	Department of State.....	42,286,000
		TOTAL.....	\$1,616,654,000

Special Schools & Classes for Exceptional Children, 1952-53¹

Source: U. S. Office of Education.

Type ²	No. of—		Enrollment		No. of Teachers ⁴
	States reporting ³	Places reporting	Elementary schools	Secondary schools	
Mentally retarded.....	48	1,244	84,878	28,687	7,067
Speech-defective.....	49	1,087	254,179	52,568	2,256
Crippled.....	45	596	15,924	1,889	1,498
Hard-of-hearing.....	46	497	9,680	2,252	480
Partially seeing.....	39	408	6,544	1,470	647
Special health problems.....	40	330	1,166	1,289	868
Deaf.....	34	185	446	489	479
Blind.....	19	67	658	181	95
Mentally gifted.....	15	27	3,683	19,233	926
TOTAL.....	...	....	389,158	108,058	14,316

¹ Public schools only; continental U. S. ² Excludes truant, delinquent and maladjusted children; home-and-hospital-bound children; exceptional children enrolled in residential schools. ³ Includes D. C. ⁴ Includes both full-time and part-time teachers. A teacher serving more than one type of exceptional child is reported only with the type to which she devotes the major portion of her time.

High-school and College Graduates, 1900-56

(Public and private schools)

Source: U. S. Office of Education.

Year of graduation	HIGH SCHOOL			COLLEGE*		
	Men	Women	Total	Men	Women	Total
1900.....	38,075	56,808	94,883	22,173	5,237	27,410
1910.....	63,676	92,753	156,429	28,762	8,437	37,199
1920.....	123,684	187,582	311,266	31,980	16,462	48,622
1929-30.....	300,376	366,528	666,904	73,615	48,869	122,484
1940-41.....	578,718	642,757	1,221,475	106,859	79,065	185,924
1947-48.....	562,863	627,046	1,189,909	175,456	95,563	271,019
1948-49.....	564,000	629,000	1,193,000	263,554	101,874	365,428
1949-50.....	570,700	629,000	1,199,700	328,841	103,217	432,058
1950-51.....	562,500	619,300	1,181,800	278,240	104,306	382,546
1951-52.....	569,200	627,300	1,196,500	225,981	104,005	329,986
1952-53†.....	572,800	625,500	1,198,300	199,793	103,256	303,049
1953-54.....	612,500	663,600	1,276,100	186,528	104,297	290,825
1954-55.....	615,300	666,100	1,281,400	182,463	102,675	285,138
1955-56†.....	634,300	684,400	1,318,700	198,233	110,579	308,812

* 1st-level degree in given field of study. † High-school graduates are estimated.

Enrollment in Vocational Classes, 1956*

Source: U. S. Office of Education.

Type of class	Agriculture	Distributive occupations	Home economics	Trades & industry	Total
Evening.....	277,849	173,085	565,753	439,640	1,456,327
Part-time.....	47,450	83,940	70,532	197,381	399,303
All-day.....	460,300	.....	850,531	246,698	1,557,529
All types.....	785,599	257,025	1,486,816	883,719	3,413,159

* Provisional figures, subject to final review of state reports.

Number Surviving Through College Entrance per 1,000 Pupils

Source: U. S. Office of Education.

Grade or year	1931-1932	1934-1935	1937-1938	1938-1939	1939-1940	1940-1941	1941-1942	1942-1943	1943-1944	1944-1945	1945-1946	1946-1947
	1932	1935	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Elementary: Fifth.....	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Sixth.....	929	953	954	955	963	968	952	954	972	952	959	954
Seventh.....	884	892	901	908	916	910	905	909	914	929	944	945
Eighth.....	818	842	850	853	846	886	834	847	870	858	875	919
High School: I.....	780	803	811	796	781	781	789	807	827	848	872	872
II.....	651	711	679	655	673	697	698	713	745	748	766	775
III.....	546	610	519	532	552	566	581	604	630	650	662	641
IV.....	481	512	428	444	476	507	514	539	557	549	552	583
Graduates.....	432	467	398	419	450	481	488	505	524	522	524	553
Year of graduation.....	1939	1942	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Enter college.....	154	129	*	*	*	*	*	205	218	234	266	283

* Because of veteran students, it is not possible to calculate retention rates.

White and Negro School Statistics, 1953-54

(Public elementary and secondary schools in 17 Southern states and the District of Columbia)

Source: U. S. Office of Education.

State	Enrollment		Instructional staff ¹		Average annual salary of instructional staff		Expenditure ² per pupil in A.D.A. ³	
	White	Negro	White	Negro	White	Negro	White	Negro
Alabama.....	460,507	243,140	15,764	7,912	\$2,834	\$2,681	\$111.99	\$105.02
Arkansas.....	315,111	99,844	10,907	2,902	2,360	2,008	99.08	71.78
Delaware.....	47,237	9,968	2,109	411	.....	.....	.....	.....
D. C.....	49,106	60,029	1,770	1,941	4,998	4,614	240.27	186.71
Florida.....	487,698	140,779	17,836	5,300	3,836	3,613	175.92	160.61
Georgia.....	533,508	274,123	19,848	8,576	.....	.....	.....	.....
Kentucky.....	553,051	38,517	18,843	1,422	.....	.....	.....	.....
Louisiana.....	343,914	208,577	13,228	6,342	.....	.....	165.08	122.07
Maryland.....	338,308	89,984	12,691	3,022	.....	.....	.....	.....
Mississippi.....	263,478	263,930	9,609	6,777	2,261	1,302	98.15	43.17
Missouri.....	637,705	65,962	23,564	2,034	.....	.....	132.46	124.85
North Carolina.....	683,284	284,782	23,971	8,944	3,335	3,406	.....	.....
Oklahoma.....	446,989	36,111	17,521	1,615	3,265	3,346	161.57	165.88
South Carolina.....	304,908	234,529	11,219	7,181	.....	.....	.....	.....
Tennessee.....	598,247	118,048	20,329	3,771	.....	.....	.....	.....
Texas.....	1,388,828	215,465	50,717	7,697	.....	.....	.....	.....
Virginia.....	523,165	172,112	19,252	5,868	3,076	3,104	.....	.....
West Virginia.....	426,345	25,646	15,437	983	.....	.....	.....	.....
TOTAL.....	8,401,389	2,581,546	304,615	82,698	.....	.....	.....	.....

¹ Includes supervisors, principals, teachers, etc. ² For instruction. ³ Average daily attendance.

Degrees Granted by Institutions of Higher Education, 1955-56

(Aggregate United States¹)

Source: U. S. Office of Education.

Field of study	Bachelor's and first professional		Second level (master's, except first professional)		Doctor's	
	Men	Women	Men	Women	Men	Women
Agriculture.....	5,030	111	823	16	339	6
Architecture.....	1,373	70	171	17	2	...
Biological sciences.....	9,607	2,959	1,379	380	905	117
Business & commerce.....	38,101	4,094	2,953	153	121	...
Education.....	19,883	50,733	16,005	14,133	1,301	282
Engineering.....	26,236	76	4,705	19	610	...
English & journalism.....	7,131	9,711	1,115	957	318	59
Fine & applied arts ²	5,044	6,170	1,451	900	199	31
Foreign languages & literature.....	1,512	2,467	471	417	195	50
Health professions.....	14,773	7,606	849	422	137	7
Dentistry, D.D.S. & D.M.D. only.....	2,975	34	...	...	...	...
Medicine, M.D. only.....	6,498	355	...	...	...	...
Nursing.....	50	5,265	1	239	...	...
Pharmacy.....	2,974	363	122	12	61	2
Other.....	2,276	1,589	726	171	76	5
Home economics.....	35	4,673	9	442	5	28
Law (LL.B., J.D., or higher degree).....	7,994	291	399	28	27	...
Mathematics.....	3,137	1,523	713	179	214	10
Physical sciences.....	10,705	1,618	2,549	252	1,610	71
Chemistry (exc. biochemistry).....	4,996	1,182	1,030	129	924	52
Physics.....	2,233	102	716	23	449	8
Other.....	3,476	334	803	100	237	11
Psychology.....	3,108	2,557	686	283	546	86
Religion.....	6,797	1,349	895	194	202	15
Social sciences.....	27,825	12,488	3,431	965	1,001	109
Economics.....	5,908	676	520	56	215	11
History.....	7,339	3,201	805	306	229	27
Political science or govt.....	4,561	1,109	430	75	183	15
Sociology.....	2,553	3,363	275	127	141	29
Other.....	7,464	4,139	1,401	401	233	27
TOTAL ³	199,571	111,727	39,343	20,027	7,930	885

¹ Includes continental U. S. plus outlying parts. ² Includes music, speech and dramatic arts. ³ Includes studies not listed.

School Enrollment, 5 to 34 Years Old, October 1954 to October 1956

Source: U. S. Bureau of the Census.

Sex and age	October 1954		October 1955		October 1956	
	Number enrolled	% enrolled	Number enrolled	% enrolled	Number enrolled	% enrolled
MALE						
5 and 6 years.....	2,746,000	76.3	2,821,000	78.1	2,839,000	77.1
7 to 13 years.....	10,139,000	99.2	10,725,000	99.2	11,179,000	99.1
14 to 17 years.....	4,002,000	88.7	4,097,000	88.6	4,275,000	89.1
18 and 19 years.....	730,000	40.6	752,000	42.5	809,000	45.1
20 to 24 years.....	677,000	19.1	686,000	18.1	830,000	20.6
25 to 29 years.....	356,000	6.7	371,000	7.0	466,000	8.9
30 to 34 years.....	109,000	1.9	123,000	2.1	154,000	2.7
TOTAL	18,759,000	54.0	19,573,000	54.9	20,552,000	56.3
FEMALE						
5 and 6 years.....	2,698,000	78.3	2,700,000	78.1	2,758,000	78.2
7 to 13 years.....	9,813,000	99.6	10,304,000	99.1	10,767,000	99.4
14 to 17 years.....	3,782,000	85.4	3,873,000	85.2	4,138,000	87.3
18 and 19 years.....	538,000	25.4	480,000	22.5	598,000	27.4
20 to 24 years.....	322,000	6.0	324,000	6.1	362,000	6.8
25 to 29 years.....	103,000	1.7	105,000	1.8	100,000	1.7
30 to 34 years.....	68,000	1.1	68,000	1.1	78,000	1.2
TOTAL	17,324,000	46.3	17,853,000	47.0	18,801,000	48.7
TOTAL						
5 and 6 years.....	5,444,000	77.3	5,520,000	78.1	5,597,000	77.6
7 to 13 years.....	19,952,000	99.4	21,028,000	99.2	21,946,000	99.3
14 to 17 years.....	7,784,000	87.1	7,970,000	86.9	8,413,000	88.2
18 and 19 years.....	1,268,000	32.4	1,232,000	31.5	1,407,000	35.4
20 to 24 years.....	999,000	11.2	1,010,000	11.1	1,192,000	12.8
24 to 29 years.....	459,000	4.1	475,000	4.2	566,000	5.1
30 to 34 years.....	176,000	1.5	192,000	1.6	232,000	1.9
TOTAL	36,083,000	50.0	37,426,000	50.8	39,353,000	52.3

NOTE: Figures include children enrolled in kindergarten.

Estimated Public and Private School Enrollment, By Type of School, 1956-57

Source: U. S. Office of Education.

Type of school	Enrollment	Type of school	Enrollment
Elementary schools*		Higher Education	
Public.....	25,478,000	Universities, colleges, professional schools, including junior colleges and normal schools...	3,232,000
Private and parochial.....	3,985,500		
Residential schools for exceptional children.....	73,600	Other schools	
Model and practice schools in teacher-training institutions.....	39,500	Private commercial schools.....	500,000
Federal schools for Indians.....	20,400	Nurse-training schools (not affiliated with colleges and universities).....	91,400
Federal schools under P.L. 874†.....	21,000	Total other schools.....	591,400
Total elementary.....	29,618,000	Grand total:.....	41,553,000
Secondary schools			
Public.....	7,175,000		
Private and parochial.....	870,600		
Residential schools for exceptional children.....	12,600		
Model and practice schools in teacher-training institutions and preparatory dept. of colleges.....	42,000		
Federal schools for Indians.....	10,400		
Federal schools under P.L. 874†.....	1,000		
Total secondary.....	8,111,600		

NOTE: These estimates include enrollments for the entire school or college year; they are not restricted to September enrollments alone.

NOTE: These estimates include enrollments for the entire school or college year; they are not restricted to September enrollments alone.

* Including kindergartens. † Includes only "schools operated on post by a Federal agency."

Academic Degree Abbreviations

Source: *American Universities and Colleges*, 1956 pub. by American Council on Education.

A.B. Bachelor of Arts	E.M. Engineer of Mines
Ae.E. Aeronautical Engineer	E.Met. Engineer of Metallurgy
A.M. Master of Arts	G.N. Graduate Nurse
A.M.T. Master of Arts in Teaching	G.Ph. Graduate in Pharmacy
B.A. Bachelor of Arts	J.D. Doctor of Jurisprudence
B.Ag. Bachelor of Agriculture	J.S.D. Doctor of Science of Law
B.App.Arts Bachelor of Applied Arts	L.H.D. Doctor of Humane Letters
B.Arch. Bachelor of Architecture	Litt.M. Master of Letters
B.B.A. Bachelor of Business Administration	LL.B. Bachelor of Laws
B.B.S. Bachelor of Business Science	LL.D. Doctor of Laws
B.C.E. Bachelor of Civil Engineering	LL.M. Master of Laws
B.Ch.E. Bachelor of Chemical Engineering	M.A. Master of Arts
B.D. Bachelor of Divinity	M.Aero.E. Master of Aeronautical Engineering
B.Dr.Art Bachelor of Dramatic Art	M.B.A. Master of Business Administration
B.Ed. Bachelor of Education	M.C.E. Master of Civil Engineering
B.E.E. Bachelor of Electrical Engineering	M.C.S. Master of Commercial Science
B.F.A. Bachelor of Fine Arts	M.D. Doctor of Medicine
B.J. Bachelor of Journalism	M.E. Mechanical Engineer
B.L. Bachelor of Letters	M.Ed. Master of Education
B.L.S. Bachelor of Library Science	Med.Sc.D. Doctor of Medical Science
B.Litt. Bachelor of Literature	M.Eng. Mining Engineer
B.Med. Bachelor of Medicine	M.F. Master of Forestry
B.Mus. Bachelor of Music	M.F.A. Master of Fine Arts
B.N. Bachelor of Nursing	M.Int.Med. Master of Internal Medicine
B.Pharm. Bachelor of Pharmacy	M.L.S. Master of Library Science
B.Ph. Bachelor of Philosophy	M.M. Master of Music
B.R.E. Bachelor of Religious Education	M.Mech.Eng. Master of Mechanical Engineering
B.S. Bachelor of Science	M.Mus. Master of Music
B.Th. Bachelor of Theology	M.N. Master of Nursing
C.E. Civil Engineer	M.P.A. Master of Public Administration
Ch.E. Chemical Engineer	M.P.H. Master of Public Health
D.C.E. Doctor of Civil Engineering	M.R.E. Master of Religious Education
D.C.S. Doctor of Commercial Science	M.S. Master of Science
D.D. Doctor of Divinity	M.Soc.Wk. Master of Social Work
D.D.S. Doctor of Dental Surgery	M.Th. Master of Theology
D.M.D. Doctor of Dental Medicine	O.D. Doctor of Optometry
D.O. Doctor of Osteopathy	Phar.D. Doctor of Pharmacy
D.M.S. Doctor of Medical Science	Ph.C. Pharmaceutical Chemist
D.P.A. Doctor of Public Administration	Ph.D. Doctor of Philosophy
D.P.H. Doctor of Public Health	Ph.G. Graduate in Pharmacy
D.R.E. Doctor of Religious Education	Ph.M. Master of Philosophy
D.S.W. Doctor of Social Welfare	S.J.D. Doctor of Juridical Science
D.Sc. Doctor of Science	S.S.E.D. Doctor of Social Science
D.V.M. Doctor of Veterinary Medicine	S.T.B. Bachelor of Sacred Theology
Ed.D. Doctor of Education	S.T.D. Doctor of Sacred Theology
E.E. Electrical Engineer	S.T.M. Master of Sacred Theology

Academic Costume: Colors Associated with Fields

Agriculture	Maize	Library Science	Lemon
Arts and Letters	White	Medicine	Green
Commerce & Accountancy	Drab	Music	Pink
Dentistry	Lilac	Oratory	Silver gray
Economics	Copper	Pharmacy	Olive green
Education	Light blue	Philosophy	Dark blue
Engineering	Orange	Physical Education	Sage green
Fine Arts, Architecture	Brown	Public Health	Salmon pink
Forestry	Russet	Science	Golden yellow
Humanities	Crimson	Theology	Scarlet
Law	Purple	Veterinary Science	Gray

Accredited U. S. Colleges and Universities

Spring Semester, 1957

Only schools fully accredited by at least one of the six regional accrediting associations are listed. The number of students is for matriculated undergraduate and graduate students who are working for a degree.

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Abilene Christian College; Abilene, Tex. (1906).....	Don H. Morris.....	2,075 C	Private
Adams State College; Alamosa, Colo. (1921).....	Fred J. Plachy.....	705 C	State
Adelphi College; Garden City, N. Y. (1896).....	Paul D. Eddy.....	2,443 C	Private
Agnes Scott College; Decatur, Ga. (1889).....	Wallace M. Alston.....	601 F	Presbyterian ⁴
Agricultural, Mechanical and Normal College; Pine Bluff, Ark. (1875)	Lawrence A. Davis, Sr.....	1,036 C	State
Akron, University of; Akron, Ohio (1870).....	Norman P. Auburn.....	4,561 C	City
Alabama, University of; University, Ala. (1831).....	James H. Newman.....	6,890 C	State
Alabama A & M College; Normal, Ala. (1875).....	J. F. Drake.....	1,093 C	State
Alabama College; Montevallo, Ala. (1896).....	F. Edward Lund.....	615 C	State
Alabama Polytechnic Institute; Auburn, Ala. (1872).....	Ralph B. Draughon.....	7,256 C	State
Alabama State College; Montgomery, Ala. ⁷	H. C. Trenholm.....	2,864 C	State
Alabama State Teachers College; Florence, Ala. (1872).....	E. B. Norton.....	1,298 C	State
Alabama State Teachers College; Jacksonville, Ala. (1883).....	Houston Cole.....	2,098 C	State
Alabama State Teachers College; Livingston, Ala. (1835).....	D. P. Culp.....	462 C	State
Alabama State Teachers College; Troy, Ala. (1887).....	C. B. Smith.....	1,081 C	State
Alaska, University of; College, Alaska (1922).....	E. N. Patty.....	507 C	Territory
Albany State College; Albany, Ga. (1903).....	William H. Dennis, Jr.....	498 C	State
Albertus Magnus College; New Haven, Conn. (1925).....	Sister Marie Louise.....	290 F	Catholic ⁴
Albion College; Albion, Mich. (1835).....	William W. Whitehouse.....	1,239 C	Methodist ⁴
Albright College; Reading, Pa. (1856).....	Harry V. Masters.....	655 C	Evan. Un. Breth. ⁴
Alcorn A & M College; Lorman, Miss. (1871).....	John D. Boyd.....	715 C	State
Alfred University; Alfred, N. Y. (1836) ²⁴	M. Ellis Drake.....	1,224 C	Private
Allegheny College; Meadville, Pa. (1815).....	Lawrence L. Pelletier.....	998 C	Methodist ⁴
Allen University; Columbia, S. C. (1870).....	Frank R. Veal.....	787 C	A.M.E.
Alliance College; Cambridge Springs, Pa. (1912).....	A. P. Coleman.....	192 C	Private
Alma College; Alma, Mich. (1886).....	Robert D. Swanson.....	683 C	Presbyterian
Alverno College; Milwaukee, Wis. (1890).....	Sister M. Augustine.....	789 F	Catholic ⁴
American International College; Springfield, Mass. (1885).....	John F. Hines.....	1,093 C	Private
American University; Washington, D. C. (1839).....	Hurst R. Anderson.....	5,408 C	Methodist
Amherst College; Amherst, Mass. (1821).....	Charles W. Cole.....	1,068 M	Private
Anderson College & Theological Seminary; Anderson, Ind. (1917).....	John A. Morrison.....	896 C	Church of God
Anna Maria College for Women; Paxton, Mass. (1946).....	Sister Irene Marie.....	160 F	Catholic ⁴
Annhurst College; South Woodstock, Conn. (1941).....	Mother Anne Emilienne.....	114 F	Catholic ⁴
Antioch College; Yellow Springs, Ohio (1852).....	Samuel B. Gould.....	1,122 C	Private
Appalachian State Teachers College; Boone, N. C. (1903).....	William H. Plemmons.....	1,906 C	State
Aquinas College; Grand Rapids, Mich. (1922).....	Msgr. A. F. Bukowski.....	632 C	Catholic
Arizona, University of; Tucson, Ariz. (1885).....	Richard A. Harvill.....	8,195 C	State
Arizona State College; Flagstaff, Ariz. (1899).....	Lacey A. Eastburn.....	976 C	State
Arizona State College; Tempe, Ariz. (1886).....	Grady Gammage.....	6,414 C	State
Arkansas, University of; Fayetteville & Little Rock, Ark. (1871).....	John T. Caldwell.....	5,195 C	State
Arkansas A & M College; College Heights, Ark. (1909).....	Horace E. Thompson.....	830 C	State
Arkansas A, M & Normal College; Pine Bluff, Ark. (1875) ⁹	Lawrence A. Davis.....	1,032 C	State
Arkansas Polytechnic College; Russellville, Ark. (1909).....	J. W. Hull.....	814 C	State
Arkansas State College; Jonesboro, Ark. (1909).....	Carl R. Reng.....	2,165 C	State
Arkansas State Teachers College; Conway, Ark. (1907).....	Silas D. Snow.....	1,283 C	State
Art Center School; Los Angeles, Calif. (1930).....	Edward A. Adams.....	692 C	Private
Asbury College; Wilmore, Ky. (1890).....	Z. T. Johnson.....	875 C	Private
Ashland College; Ashland, Ohio (1878).....	Glenn L. Clayton.....	678 C	Brethren ⁴
Assumption College; Worcester, Mass. (1904).....	V. Rev. A. H. Desautels.....	269 M ⁵	Catholic ⁴
Athens College; Athens, Ala. (1822).....	Perry B. James.....	361 C	Methodist
Atlanta University System.....			
Atlanta University; Atlanta, Ga. (1865).....	Rufus E. Clement.....	465 C	Private
Morehouse College; Atlanta, Ga. (1867).....	Benjamin E. Mays.....	677 M	Private
Spelman College; Atlanta, Ga. (1881).....	Albert E. Manley.....	467 F	Baptist ⁴
Atlantic Christian College; Wilson, N. C. (1902).....	Arthur D. Wenger.....	692 C	Disc. of Christ ⁴
Atlantic Union College; South Lancaster, Mass. (1882).....	L. M. Stump.....	458 C	7th Day Adven.
Augsburg College & Theological Seminary; Minneapolis (1869).....	Bernhard Christensen.....	684 C	Lutheran
Augustana College; Rock Island, Ill. (1860).....	Conrad Bergendoff.....	1,062 C	Lutheran
Augustana College; Sioux Falls, S. Dak. (1860).....	Lawrence M. Stavig.....	1,082 C	Lutheran
Aurora College; Aurora, Ill. (1893).....	Theodore P. Stephens.....	731 C	Adven. Christ.
Austin College; Sherman, Tex. (1849).....	John D. Moseley.....	681 C	Presbyterian
Austin Peay State College; Clarksville, Tenn. (1927).....	Halbert Harvill.....	928 C	State
Babson Institute; Babson Park, Mass. (1919).....	Gordon M. Trim.....	580 M	Private
Baker University; Baldwin, Kans. (1858).....	Wm. J. Scarborough ⁴	496 C	Methodist ⁴
Baldwin-Wallace College; Berea, Ohio (1845).....	A. B. Bonds, Jr.....	1,787 C	Methodist

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Ball State Teachers College; Muncie, Ind. (1918)	John R. Emens	4,312 C	State
Barat College of the Sacred Heart; Lake Forest, Ill. (1919)	Mother Margaret Burke	306 F	Catholic ⁴
Barber-Scotia College; Concord, N. C. (1867)	L. S. Cozart	210 C	Presbyterian
Bard College; Annandale-on-Hudson, N. Y. (1860)	James H. Case, Jr.	228 C	Private
Barnard College; New York, N. Y. (1889) ²⁵	Millicent C. McIntosh	1,268 F	Private
Barry College; Miami, Fla. (1940)	Rev. Mother M. Gerald	443 F ⁶	Catholic ⁴
Bates College; Lewiston, Maine (1864)	Charles F. Phillips	832 C	Private
Baylor University; Waco, Tex. (1845)	William R. White	4,733 C	Baptist
Beaver College; Jenkintown, Pa. (1853)	Raymon Kistler	630 F	Presbyterian ⁴
Belhaven College; Jackson, Miss. (1894)	McFerran Crowe	210 C	Presbyterian
Bellarmine College; Louisville, Ky. (1950)	Msgr. A. F. Horrigan	832 M ⁶	Catholic
Beloit College; Beloit, Wis. (1846)	Miller Upton	962 C	Congregational ⁴
Benedict College; Columbia, S. C. (1870)	J. A. Bacoats	664 C	Baptist ⁴
Bennett College; Greensboro, N. C. (1873)	Willie B. Player	456 F	Methodist ⁴
Bennington College; Bennington, Vt. (1925)	William C. Fels	327 F ⁶	Private
Berea College; Berea, Ky. (1855)	Francis S. Hutchins	1,093 C	Private
Bethany College; Bethany, W. Va. (1840)	Perry E. Gresham	560 C	Disc. of Christ ⁴
Bethany College; Lindsborg, Kans. (1881)	Robert A. L. Mortvedt	296 C	Lutheran
Bethany Nazarene College; Bethany, Okla. (1909)	Roy H. Cantrell	966 C	Nazarene
Bethel College; McKenzie, Tenn. (1842)	Roy N. Baker	535 C	Presbyterian
Bethel College; North Newton, Kans. (1887)	D. C. Wedel	450 C	Mennonite ⁴
Bethune-Cockman College; Daytona Beach, Fla. (1904)	Richard V. Moore	683 C	Methodist
Birmingham-Southern College; Birmingham, Ala. (1856)	Henry K. Stanford	915 C	Methodist
Bishop College; Marshall, Tex. (1881)	M. K. Curry, Jr.	473 C	Baptist
Black Hills Teachers College; Spearfish, S. Dak. (1883)	Russell E. Jonas	650 C	State
Blackburn College; Carlinville, Ill. (1857)	Robert P. Ludlum	350 C	Presbyterian ⁴
Blue Mountain College; Blue Mountain, Miss. (1873)	Lawrence T. Lowrey	303 F ⁶	Baptist
Bluefield State College; Bluefield, W. Va. (1895)	S. J. Wright	304 C	State
Bluffton College; Bluffton, Ohio (1900)	Lloyd L. Ramseyer	292 C	Mennonite ⁴
Boston College; Chestnut Hill, Mass. (1863)	V. Rev. J. R. N. Maxwell	7,552 C	Catholic ⁴
Boston University; Boston, Mass. (1839)	Harold C. Case	17,165 C	Methodist ⁴
Bowdoin College; Brunswick, Maine (1794)	James S. Coles	795 M	Private
Bowling Green State University; Bowling Green, Ohio (1910)	Ralph W. McDonald	4,330 C	State
Bradley University; Peoria, Ill. (1897)	Harold P. Rodes	2,796 C	Private
Brandeis University; Waltham, Mass. (1948)	Abram L. Sachar	1,149 C	Private ²⁶
Brenau College; Gainesville, Ga. (1878)	Josiah Crudup	260 F	Private
Briar Cliff College; Sioux City, Iowa (1930)	Sister Mary Matilda	300 F	Catholic ⁴
Bridgeport, University of; Bridgeport, Conn. (1927)	James H. Halsey	3,500 C	Private
Bridgewater College; Bridgewater, Va. (1880)	Warren D. Bowman	481 C	Brethren ⁴
Brigham Young University; Provo, Utah (1875)	Ernest L. Wilkinson	8,079 C	Latter-day Saints
Brooklyn, Polytechnic Institute of; Brooklyn, N. Y. (1854)	Ernest Weker ¹⁴	4,700 M ⁶	Private
Brooklyn College. See New York, College of the City of			
Brown University; Providence, R. I. (1764) ⁷	Barnaby C. Keeney	3,491 Co	Private
Bryn Mawr College; Bryn Mawr, Pa. (1885)	Katharine E. McBride	786 F ⁶	Private
Bucknell University; Lewisburg, Pa. (1846)	Merle M. Odgers	1,944 C	Baptist ⁴
Buena Vista College; Storm Lake, Iowa (1891)	John A. Fisher	454 C	Presbyterian
Buffalo, University of; Buffalo, N. Y. (1846)	Clifford C. Furnas ¹¹	9,802 C	Private
Butler University; Indianapolis, Ind. (1855)	M. O. Ross	3,688 C	Disc. of Christ ⁴
Caldwell College for Woman; Caldwell, N. J. (1939)	Sister M. Marguerite	241 F	Catholic ⁴
California, University of; Berkeley, Calif. (1868)	Robert G. Sproul	38,923 C ²⁸	State
Berkeley Campus	Clark Kerr ¹¹	16,939 C	State
Davis Campus	Stanley B. Freeborn ¹⁷	2,044 C	State
Lick Observatory; Mt. Hamilton	C. Donald Shane ¹⁸		State
Los Angeles Campus (UCLA)	Raymond B. Allen ¹¹	15,532 C	State
Riverside Campus	Herman T. Spieth ¹⁷	677 C	State
San Francisco Campus ²⁹	J. B. DeC. M. Saunders ¹²	1,681 C	State
Santa Barbara College	Elmer R. Noble ²⁰	2,080 C	State
Scripps Institution of Oceanography; La Jolla	Roger R. Revelle ¹⁸	31 C	State
California College of Arts & Crafts; Oakland, Calif. (1907) ⁹	Daniel S. Defenbacher	455 C	Private
California Institute of Technology; Pasadena, Calif. (1891)	Lee A. DuBridge	1,093 M	Private
California School of Fine Arts; San Francisco, Calif. (1874)	Gordon Woods ¹⁸	267 C	Private
California State Polytechnic College; San Luis Obispo, Calif. (1901) ³¹	Julian A. McPhee	3,477 C	State
California Western University; San Diego, Calif. ⁷	William C. Rust	231 C	Methodist
Calvin College; Grand Rapids, Mich. (1876)	William Spoelhof	1,600 C	Christian Ref.
Canisius College; Buffalo, N. Y. (1870)	V. Rev. P. E. Dobson	1,440 M ⁶	Catholic ⁴
Capital University; Columbus, Ohio (1850)	Harold L. Yochum	1,252 C	Lutheran
Cardinal Stritch College; Milwaukee, Wis. (1937)	Sister Mary Aquin	365 F	Catholic ⁴
Carleton College; Northfield, Minn. (1866)	Laurence M. Gould	945 C	(82)
Carnegie Institute of Technology; Pittsburgh, Pa. (1900)	John C. Warner	3,203 C	Private
Carroll College; Helena, Mont. (1909)	Rt. Rev. R. V. Kavanagh	730 C	Catholic
Carroll College; Waukesha, Wis. (1846)	Robert D. Steele	696 C	Presbyterian ⁴
Carson-Newman College; Jefferson City, Tenn. (1851)	Harley Fite	1,260 C	Baptist

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Carthage College; Carthage, Ill. (1870)	Harold H. Lentz	420 C	Lutheran
Cascade College; Portland, Oreg. (1918)	Edison Habegger	218 C	Private
Case Institute of Technology; Cleveland, Ohio (1880)	T. Keith Glennan	2,001 M ⁶	Private
Catawba College; Salisbury, N. C. (1851)	A. R. Keppel	114 C	Evan. & Ref. ⁴
Catholic University of America; Washington, D. C. (1889)	Most Rev. B. J. McEnteggar ¹⁰	3,478 C	Catholic
Cedar Crest College; Allentown, Pa. (1867)	Dale H. Moore	448 F	Evan. & Ref. ⁴
Centenary College of Louisiana; Shreveport, La. (1825)	Joe J. Mickle	1,551 C	Methodist
Central College; Fayette, Mo. (1854)	Ralph L. Woodward	574 C	Methodist
Central College; Pella, Iowa (1853)	G. T. Vander Lugt	391 C	Reformed
Central Michigan College; Mt. Pleasant, Mich. (1892)	Charles L. Anspach	4,842 C	State
Central Missouri State College; Warrensburg, Mo. (1871)	Warren C. Lovinger	1,984 C	State
Central State College; Edmond, Okla. (1890)	W. Max Chambers	2,198 C	State
Central State College; Wilberforce, Ohio (1887)	Charles H. Wesley	1,071 C	State
Central Washington College of Education; Ellensburg, Wash. (1890)	Robert E. McConnell	1,668 C	State
Centre College of Kentucky; Danville, Ky. (1819)	Walter A. Groves	450 C	Presbyterian ⁴
Chapman College; Orange, Calif. (1861)	John L. Davis	281 C	Disc. of Christ ⁴
Charleston, College of; Charleston, S. C. (1770)	George D. Grice	295 C	Private
Chatham College; Pittsburgh, Pa. (1869)	Paul R. Anderson	450 F	Private
Chattanooga, University of; Chattanooga, Tenn. (1886)	David A. Lockmiller	1,362 C	Methodist ⁴
Chestnut Hill College; Philadelphia, Pa. (1871)	Sister Catharine Frances	452 F	Catholic
Chicago, School of the Art Institute of; Chicago, Ill. (1879)	Hubert Ropp ¹²	910 C	Private
Chicago, University of; Chicago, Ill. (1890)	Lawrence A. Kimpton ¹¹	6,752 C	Private
Chicago Teachers College; Chicago, Ill. (1869)	Raymond M. Cook ¹²	2,724 C	City
Chico State College; Chico, Calif. (1887)	Glenn Kendall	2,187 C	State
Chouinard Art Institute; Los Angeles, Calif. (1921)	Mrs. N. M. Chouinard	704 C	Private
Cincinnati, University of; Cincinnati, Ohio (1819)	Walter C. Langsam	13,158 C	City
Citadel, The; Military College of S. C.; Charleston, S. C. (1842)	Gen. Mark W. Clark	2,204 M	State
City College. See New York, College of the City of.			
Clafin University; Orangeburg, S. C. (1869)	H. V. Manning	439 C	Methodist
Claremont College; Claremont, Calif. (1925)	Robert J. Bernard ¹³	397 C	Private
Claremont Men's College; Claremont, Calif. (1947)	George C. S. Benson	382 M	Private
Clark College; Atlanta, Ga. (1869)	James P. Brawley	816 C	Methodist
Clark University; Worcester, Mass. (1887)	Howard B. Jefferson	832 Co	Private
Clarke College; Dubuque, Iowa (1843) ⁷	Sister Mary B. Phelan	523 F	Catholic ⁴
Clarkson College of Technology; Potsdam, N. Y. (1896)	William G. Van Note	1,365 M	Private
Clemson Agricultural College; Clemson, S. C. (1889)	Robert F. Poole	3,220 C	State
Coe College; Cedar Rapids, Iowa (1851)	Harry M. Gage ¹⁴	800 C	Presbyterian ⁴
Coker College; Hartsville, S. C. (1908)	J. A. Barry, Jr.	268 F ⁸	Private
Colby College; Waterville, Maine (1813)	J. Seelye Bixler	1,054 C	Private
Colgate University; Hamilton, N. Y. (1819)	Everett Case	1,301 M	Private
Colorado, University of; Boulder & Denver Colo. (1876)	Quigg Newton	9,240 C	State
Colorado College; Colorado Springs, Colo. (1874)	Louis T. Benezet	1,013 C	Private
Colorado State College; Greeley, Colo. (1890)	William R. Ross	2,528 C	State
Colorado State University; Fort Collins, Colo. (1870) ¹⁵	William E. Morgan	4,346 C	State
Columbia College; Columbia, S. C. (1854)	R. Wright Spears	524 F ⁸	Methodist
Columbia University; New York, N. Y. (1754) ²⁵	Grayson Kirk	20,840 C	Private
Concord College; Athens, W. Va. (1875)	Virgil H. Stewart	1,009 C	State
Concordia College; Moorhead, Minn. (1891)	Joseph L. Knutson	1,323 C	Lutheran
Concordia Teachers College; River Forest, Ill. (1864)	Rev. Martin L. Koehneke	698 C	Lutheran
Concordia Teachers College; Seward, Nebr. (1893)	Paul A. Zimmerman	434 C	Lutheran
Connecticut, University of; Storrs, Conn. (1881)	A. N. Jorgensen	9,360 C	State
Connecticut College for Women; New London, Conn. (1911)	Rosemary Park	840 F	Private
Connecticut State Teachers College; Danbury, Conn. (1904)	Ruth A. Haas	1,021 C	State
Connecticut State Teachers College; New Britain, Conn. (1849)	Herbert D. Welte	1,788 C	State
Connecticut State Teachers College; New Haven, Conn. (1893)	Hilton C. Buley	2,179 C	State
Connecticut State Teachers College; Willimantic, Conn. (1889)	J. Eugene Smith	480 C	State
Converse College; Spartanburg, S. C. (1889)	O. C. Carmichael, Jr.	341 F ⁸	Private
Cooper Union; New York, N. Y. (1859)	Edwin S. Burdell	1,187 C	Private
Cornell College; Mount Vernon, Iowa (1853)	Russell D. Cole	735 C	Methodist ⁴
Cornell University; Ithaca, N. Y. (1865) ²⁵	Deane W. Malott	10,357 C	Private & State
Creighton University; Omaha, Nebr. (1878)	V. Rev. Carl M. Reinert	2,639 C	Catholic ⁴
Culver-Stockton College; Canton, Mo. (1853)	Fred Heleabeck	331 C	Disc. of Christ ⁴
Dakota Wesleyan University; Mitchell, S. Dak. (1885)	Matthew D. Smith	328 C	Methodist ⁴
Dartmouth College; Hanover, N. H. (1770)	John S. Dickey	3,060 M	Private
David Lipscomb College; Nashville, Tenn. (1891)	Athens Clay Pullias	333 C	Ch. of Christ ⁴
Davidson College; Davidson, N. C. (1837)	John R. Cunningham	817 M	Presbyterian
Davis & Elkins College; Elkins, W. Va. (1904)	David K. Allen	469 C	Presbyterian
Dayton, University of; Dayton, Ohio (1882) ⁹	V. Rev. A. L. Seebold	4,335 C	Catholic ⁴
Delaware, University of; Newark, Del. (1833)	John A. Perkins	1,916 C	State
Delta State College; Cleveland, Miss. (1925)	James M. Ewing	508 C	State
Denison University; Granville, Ohio (1831)	A. Blair Knapp	1,314 C	Baptist ⁴
Denver, University of; Denver, Colo. (1864)	Chester M. Alter ¹¹	4,083 C	Methodist ¹

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
De Paul University; Chicago, Ill. (1898)	V. Rev. C. J. O'Malley	6,666 C	Catholic
DePauw University; Greencastle, Ind. (1837)	Russell J. Humbert	1,902 C	Methodist ⁴
Detroit, University of; Detroit, Mich. (1877)	Rev. Celestin J. Steiner	9,666 C	Catholic ⁴
Dickinson College; Carlisle, Pa. (1773)	William W. Edell	887 C	Methodist ⁴
Dillard University; New Orleans, La. (1930)	Albert W. Dent	842 C	Cg.-Chr. & Meth. ⁴
District of Columbia Teachers College; Washington, D. C. (1955)	Walter E. Hager	1,131 C	City
Doane College; Crete, Nebr. (1872)	Donald M. Typer	310 C	Congregational ⁴
Dominican College of San Rafael; San Rafael, Calif. (1890)	Sister M. Patrick	398 F	Catholic ⁴
Douglass College; New Brunswick, N. J. (1918) ⁴⁶	Mary I. Bunting ¹²	1,300 F	State
Drake University; Des Moines, Iowa (1881)	Henry G. Harmon	5,409 C	Private
Drew University; Madison, N. J. (1867)	Fred G. Holloway	709 C	Methodist ⁴
Drexel Institute of Technology; Philadelphia, Pa. (1891)	James Creese	7,415 C	Private
Dropsie College; Philadelphia, Pa. (1907)	Abraham A. Neuman	123 C	Private
Drury College; Springfield, Mo. (1873)	J. F. Findlay	725 C	Congregational ⁴
Dubuque, University of; Dubuque, Iowa (1852)	Gaylord M. Couchman	553 C	Presbyterian ⁴
Duchess College of the Sacred Heart; Omaha, Nebr. (1881)	Mother Edith McShane	242 F	Catholic ⁴
Duke University; Durham, N. C. (1838)	A. Hollis Edens	4,968 C	Methodist ⁴
Dunbarton College of Holy Cross; Washington, D. C. (1935)	Sister M. M. Dolores	220 F	Catholic ⁴
Duquesne University; Pittsburgh, Pa. (1878)	V. Rev. V. F. Gallagher	4,275 C	Catholic ⁴
D'Youville College; Buffalo, N. Y. (1908)	Sister Regina Marie	545 F	Catholic ⁴
Earlham College; Richmond, Ind. (1847)	Thomas E. Jones	786 C	Quaker
East Carolina College; Greenville, N. C. (1907)	John D. Messick	2,693 C	State
East Central State College; Ada, Okla. (1909)	Charles F. Spencer	1,795 C	State
East Tennessee State College; Johnson City, Tenn. (1911)	Burgin E. Dossett	3,381 C	State
East Texas State Teachers College; Commerce, Tex. (1889)	James G. Gee	2,171 C	State
Eastern Baptist College; St. Davids, Pa. (1932)	Gilbert L. Guffin	219 C	Baptist ⁴
Eastern Baptist Theological Seminary, The; Philadelphia, Pa. (1925)	Gilbert L. Guffin	151 C	Baptist ⁴
Eastern Illinois State College; Charleston, Ill. (1895)	Quincy Dounda	1,989 C	State
Eastern Kentucky State College; Richmond, Ky. (1906)	W. F. O'Donnell	2,541 C	State
Eastern Michigan College; Ypsilanti, Mich. (1849)	Eugene B. Elliott	3,962 C	State
Eastern Montana College of Education; Billings, Mont. (1925)	A. G. Peterson	757 C	State
Eastern Nazarene College; Quincy, Mass. (1900)	Edward S. Mann	494 C	Nazarene
Eastern New Mexico University; Portales, N. Mex. (1934)	Floyd D. Golden	1,303 C	State
Eastern Oregon College of Education; La Grande, Ore. (1929)	Frank B. Bennett	536 C	State
Eastern Washington College of Education; Cheney, Wash. (1890)	Don S. Patterson	1,465 C	State
Elizabethtown College; Elizabethtown, Pa. (1899)	A. C. Baugher	534 C	Brethren
Elmhurst College; Elmhurst, Ill. (1871) ⁹	C. L. Josephson ¹⁴	774 C	Evan. & Ref.
Elmira College; Elmira, N. Y. (1855)	J. Ralph Murray	474 F ⁶	Private
Elon College; Elon College, N. C. (1889)	Leon E. Smith	1,056 C	Cong. Christian
Emerson College; Boston, Mass. (1880)	S. Justus McKinley	380 C	Private
Emmanuel College; Boston, Mass. (1919)	Sister Alice Gertrude	660 F	Catholic ⁴
Emmanuel Missionary College; Berrien Springs, Mich. (1874)	F. O. Rittenhouse	640 C	7th Day Adven.
Emory University; Atlanta, Ga. (1836)	Rev. Earl G. Hunt, Jr.	500 C	Methodist
Emporia, The College of; Emporia, Kans. (1882)	Sidney W. Martin	3,623 C	Methodist ⁴
Erskine College; Due West, S. C. (1839)	Luther E. Sharpe	280 C	Presbyterian
Evansville College; Evansville, Ind. (1854)	J. M. Lesesne	415 C	Presbyterian
Fairfield University; Fairfield, Conn. (1942)	Melvin W. Hyde	1,923 C	Methodist ⁴
Fairleigh Dickinson University; Rutherford & Teaneck, N. J. (1941)	V. Rev. J. D. Fitzgerald	1,111 M ⁵	Catholic
Fairmont State College; Fairmont, W. Va. (1867)	Peter Sammartino	7,851 C	Private ⁵⁷
Fenn College; Cleveland, Ohio (1923)	John W. Pence	1,298 C	State
Fisk University; Nashville, Tenn. (1865) ⁷	G. Brooks Earnest	3,053 C	Private
Flora Macdonald College; Red Springs, N. C. (1896)	Stephen J. Wright	707 C	Private
Florida, University of; Gainesville, Fla. (1853)	Marshall S. Woodson	356 F ⁶	Presbyterian
Florida A & M University; Tallahassee, Fla. (1887)	J. Wayne Reitz	10,997 C	State
Florida Nor. & Ind. Memorial College; St. Augustine (1892)	George W. Gore, Jr.	2,466 C	State
Florida Southern College; Lakeland, Fla. (1885)	R. W. Puryear	293 C	Baptist
Florida State University; Tallahassee, Fla. (1851)	Ludd M. Spivey	2,300 C	Methodist ⁴
Fontbonne College; St. Louis, Mo. (1923) ³⁸	Doak S. Campbell	6,598 C	State
Fordham University; New York, N. Y. (1841)	Sister S. M. Vachon	687 F	Catholic ⁴
Fort Hays Kansas State College; Hays, Kans. (1901)	Rev. Laurence J. McGinley	8,471 C	Catholic
Fort Valley State College; Fort Valley, Ga. (1895)	M. C. Cunningham	2,370 C	State
Franklin & Marshall College; Lancaster, Pa. (1787)	C. V. Troup	720 C	State
Franklin College; Franklin, Ind. (1834)	F. deWolfe Bolman, Jr.	1,130 M	Evan. & Ref. ⁴
Fresno State College; Fresno, Calif. (1911)	Harold W. Richardson	550 C	Baptist ⁴
Friends University; Wichita, Kans. (1898)	Arnold E. Joyal	4,264 C	State
Furman University; Greenville, S. C. (1826)	Lowell E. Roberts ¹⁵	728 C	Quaker
Gannon College; Erie, Pa. (1944)	John L. Plyler	1,330 C	Baptist
Gen. Assembly's Trin'g Sch. for Lay Workers; Richmond, Va. (1914)	Wilfrid J. Nash	1,260 M	Catholic
General Beadle State Teachers College; Madison, S. Dak. (1883)	Rev. C. E. S. Kraemer	98 C	Presbyterian
Geneva College; Beaver Falls, Pa. (1848)	V. A. Lowry	346 C	State
George Peabody College for Teachers; Nashville, Tenn. (1875)	Edwin C. Clarke	853 C	Presbyterian
	Henry H. Hill	1,612 C	Private

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
George Pepperdine College; Los Angeles, Calif. (1937)	Hugh M. Tiner	1,101 C	Ch. of Christ ⁴
George Washington University; Washington, D. C. (1821)	Cloyd H. Marvin	9,260 C	Private
George Williams College; Chicago, Ill. (1890)	John R. McCurdy	283 C	Y.M.C.A. ⁴
Georgetown College; Georgetown, Ky. (1798)	H. Leo Eddleman	1,007 C	Baptist ⁴
Georgetown University; Washington, D. C. (1789)	V. Rev. Edward B. Bunn	5,770 M ⁵	Catholic ⁴
Georgia, University of; Athens, Ga. (1785)	O. C. Aderhold	5,324 C	State
Georgia Institute of Technology; Atlanta, Ga. (1885)	Paul Weber ¹⁴	4,958 C	State
Georgia State College for Women; Milledgeville, Ga. (1889)	Robert E. Lee	598 F	State
Georgia State Col. of Bus. Adminis.; Atlanta, Ga. (1914)	(Vacant)	4,453 C	State
Georgia Teachers College; Collegeboro, Ga. (1924)	Zach S. Henderson	808 C	State
Georgian Court College; Lakewood, N. J. (1908)	Mother Marie Anna	217 F	Catholic ⁴
Gettysburg College; Gettysburg, Pa. (1832)	Willard S. Paul	1,349 C	Lutheran ⁴
Glenville State College; Glenville, W. Va. (1872)	Harry B. Heffin	648 C	State
Golden Gate College; San Francisco, Calif. (1901)	Nagel T. Miner	1,433 C	Y.M.C.A. ⁴
Gonzaga University; Spokane, Wash. (1887)	V. Rev. Francis E. Corkery	1,466 C	Catholic
Good Counsel College; White Plains, N. Y. (1923)	Mother Mary Dolores	294 F	Catholic ⁴
Goshen College; Goshen, Ind. (1894)	Paul Mininger	859 C	Mennonite
Goucher College; Towson, Md. (1885)	Otto F. Kraushaar	660 F	Private
Grambling College; Grambling, La. (1901)	R. W. E. Jones	2,007 C	State
Great Falls, College of; Great Falls, Mont. (1932)	Msgr. James J. Donovan	529 C	Catholic ⁴
Greensboro College; Greensboro, N. C. (1838)	Harold H. Hutson	436 C	Methodist ⁴
Greenville College; Greenville, Ill. (1892)	H. J. Long	420 C	Methodist
Grinnell College; Grinnell, Iowa (1846)	Howard R. Bowen	835 C	Cg.-Chr. & Epis. ⁴
Grove City College; Grove City, Pa. (1876)	J. Stanley Harker	1,249 C	Presbyterian ⁴
Guilford College; Guilford College, N. C. (1837)	Clyde A. Milner	721 C	Quaker ⁴
Gustavus Adolphus College; St. Peter, Minn. (1862)	Edgar M. Carlson	949 C	Lutheran
Hamilton College; Clinton, N. Y. (1812)	Robert W. McEwen	635 M	Private
Hamline University; St. Paul, Minn. (1854)	Paul H. Giddens	1,157 C	Methodist ⁴
Hampden-Sydney College; Hampden-Sydney, Va. (1776)	Joseph Clarke Robert	375 M	Presbyterian
Hampton Institute; Hampton, Va. (1868)	Alonso G. Morén	1,160 C	Private
Hanover College; Hanover, Ind. (1827)	Albert G. Parker, Jr.	652 C	Presbyterian ⁴
Hardin-Simmons University; Abilene, Tex. (1891)	Evan A. Reiff	1,425 C	Baptist
Harding College; Searcy, Ark. (1919)	George S. Benson	816 C	Ch. of Christ ⁴
Hart College. See New York, State University of			
Harris Teachers College; St. Louis, Mo. (1857)	Charles A. Naylor	968 C	City & State
Hart College of Music; Hartford, Conn. (1920)	Moshe Paranov	157 C	Private
Hartwick College; Oneonta, N. Y. (1928)	M. A. F. Ritchie	441 C	Lutheran ⁴
Harvard University; Cambridge, Mass. (1636)	Nathan M. Pusey	10,566 M ⁵	Private
Hastings College; Hastings, Nebr. (1882)	F. E. Weyer ¹⁴	739 C	Presbyterian
Haverford College; Haverford, Pa. (1833)	Hugh Borton	456 M ⁵	Private
Hawaii, University of; Honolulu, Hawaii (1907)	Willard Wilson ¹⁴	4,419 C	Territory
Hebrew Teachers College; Brookline, Mass. (1921)	Eisig Silberschlag ¹²	100 C	Private
Heidelberg College; Tiffin, Ohio (1850)	Terry Wickham	653 C	Evan. & Ref. ⁴
Henderson State Teachers College; Arkadelphia, Ark. (1890)	D. D. McBrien	1,188 C	State
Hendrix College; Conway, Ark. (1884)	Matt L. Ellis	427 C	Methodist
High Point College; High Point, N. C. (1922)	Dennis H. Cooke	900 C	Methodist
Hillsdale College; Hillsdale, Mich. (1844)	J. Donald Phillips	653 C	Baptist ⁴
Hillier College; Hartford, Conn. (1879) ⁹	Alan S. Wilson	1,727 C	Private
Hiram College; Hiram, Ohio (1850)	Paul H. Fall	541 C	Disc. of Christ ⁴
Hobart & William Smith Colleges; Geneva, N. Y. (1822)	Rev. Dr. L. M. Hirshson	903 Co ³⁸	Episcopal ⁴
Hofstra College; Hempstead, N. Y. (1935)	John C. Adams	4,440 C	Private
Hollins College; Hollins College, Va. (1842)	John R. Everett	480 F	Private
Holy Cross, College of the; Worcester, Mass. (1843)	V. Rev. W. A. Donaghy	1,800 M	Catholic ⁴
Holy Names, College of the; Oakland, Calif. (1868)	Sister Imelda Maria	395 F	Catholic ⁴
Holy Names College; Spokane, Wash. (1907)	Sister Marian Raphael	211 F	Catholic ⁴
Hood College; Frederick, Md. (1893)	Andrew G. Truxal	471 F	Evan. & Ref. ⁴
Hope College; Holland, Mich. (1851)	Irwin J. Lubbers	894 C	Reformed
Houghton College; Houghton, N. Y. (1883)	Stephen W. Paine	581 C	Methodist
Houston, University of; Houston, Tex. (1934)	Clanton W. Williams	12,156 C	(⁴⁰)
Howard College; Birmingham, Ala. (1842)	Harwell G. Davis	1,741 C	Baptist
Howard University; Washington, D. C. (1867)	Mordecai W. Johnson	3,481 C	Private
Humboldt State College; Arcata, Calif. (1913)	Cornelius H. Siemens	1,394 C	State
Hunter College. See New York, College of the City of			
Huntingdon College; Montgomery, Ala. (1854)	Hubert Searcy	716 C	Methodist ⁴
Huron College; Huron, S. Dak. (1883)	Daniel E. Kerr	340 C	Presbyterian
Huston-Tillotson College; Austin, Tex. (1952)	J. J. Seabrook	442 C	Cong. & Meth. ⁴
Idaho, College of; Caldwell, Idaho (1891)	Tom E. Shearer	614 C	Presbyterian ⁴
Idaho, University of; Moscow, Idaho (1889)	D. R. Theophilus	3,505 C	State
Idaho State College, Pocatello, Idaho (1902)	Carl W. McIntosh	1,795 C	State
Illinois, University of; Urbana-Champaign & Chicago, Ill. (1867)	David D. Henry	22,720 C	State
Illinois College; Jacksonville, Ill. (1829)	L. Vernon Caine	332 C	Cong. & Presb. ⁴
Illinois Institute of Technology; Chicago, Ill. (1892)	John T. Rettaliata	7,568 C	Private

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Illinois State Normal University; Normal, Ill. (1857)	Robert G. Bone	2,547 C	State
Illinois Wesleyan University; Bloomington, Ill. (1850)	Merrill J. Holmes	1,017 C	Methodist ⁴
Immaculata College; Immaculata, Pa. (1920)	Sister Mary of Lourdes	495 F	Catholic
Immaculate Heart College; Los Angeles, Calif. (1916)	Sister Mary Thecla	948 F ⁶	Catholic ⁴
Incarinate Word College; San Antonio, Tex. (1900)	Sister M. Columkille	769 F ⁶	Catholic ⁴
Indiana Central College; Indianapolis, Ind. (1902)	I. Lynd Esch	524 C	Evan. Un. Breth. ⁴
Indiana State Teachers College; Terre Haute, Ind. (1870)	Raleigh W. Holmstedt	2,938 C	State
Indiana University; Bloomington & Indianapolis, Ind. (1820)	H. B. Wells	20,745 C	State
Inter American Univ. of Puerto Rico; ⁴¹ San Germán, P. R. (1912)	Ronald C. Bauer	890 C	Presbyterian ⁴
Iona College; New Rochelle, N. Y. (1940)	Brother W. H. Barnes	2,004 M	Catholic ⁴
Iowa, State University of; Iowa City, Iowa (1847)	Virgil M. Hancher	9,501 C	State
Iowa State College of A & M Arts; Ames, Iowa (1858)	James H. Hilton	9,673 C	State
Iowa State Teachers College; Cedar Falls, Iowa (1876) ⁷	J. W. Maucker	3,020 C	State
Iowa Wesleyan College; Mount Pleasant, Iowa (1842)	J. Raymond Chadwick	530 C	Methodist
Ithaca College; Ithaca, N. Y. (1892)	Howard I. Dillingham	1,230 C	Private
Jackson College; Medford, Mass. (1910) ⁴²	Katharine R. Jeffers ¹²	497 F	Private
Jackson State College; Jackson, Miss. (1877)	Jacob L. Reddix	1,012 C	State
Jamestown College; Jamestown, N. Dak. (1884)	Edwin H. Rian	481 C	Presbyterian ⁴
Jarvis Christian College; Hawkins, Tex. (1912) ⁹	Cleo W. Blackburn	200 C	Disc. of Christ
Jewish Theological Seminary of America; New York, N. Y. (1887)	Louis Finkelstein ¹¹	612 C ⁴³	Jewish ⁴
John Carroll University; Cleveland, Ohio (1886)	Rev. Hugh E. Dunn	2,792 M ⁵	Catholic ⁴
Johns Hopkins University; Baltimore, Md. (1876)	Milton S. Eisenhower	4,502 M ⁴	Private
Johnson C. Smith University; Charlotte, N. C. (1867)	J. W. Seabrook ¹⁴	848 C	Presbyterian ⁴
Judson College; Marion, Ala. (1838)	J. I. Riddle	266 F	Baptist
Juniata College; Huntingdon, Pa. (1876)	Calvert N. Ellis	684 C	Brethren ⁴
Kalamazoo College; Kalamazoo, Mich. (1833)	Weimer K. Hicks	600 C	Baptist ⁴
Kansas, University of; Lawrence & Kansas City, Kans. (1865)	Franklin D. Murphy ¹¹	7,902 C	State
Kansas City, University of; Kansas City, Mo. (1929)	Richard M. Drake ¹⁶	2,725 C	Private
Kansas State College of Agr. & App. Sci.; Manhattan, Kans. (1863)	James A. McCain	6,150 C	State
Kansas State Teachers College; Emporia, Kans. (1863)	John E. King	2,373 C	State
Kansas State Teachers College; Pittsburg, Kans. (1903)	Rees H. Hughes	2,717 C	State
Kent State University; Kent, Ohio (1910)	George A. Bowman	5,740 C	State
Kentucky, University of; Lexington, Ky. (1865)	F. G. Dickey	6,746 C	State
Kentucky State College; Frankfort, Ky. (1886)	Rufus B. Atwood	494 C	State
Kentucky Wesleyan College; Owensboro, Ky. (1860)	Oscar W. Lever	419 C	Methodist ⁴
Kenyon College; Gambier, Ohio (1824)	Frank E. Bailey ¹⁴	527 M	Episcopal ⁴
Keuka College; Keuka Park, N. Y. (1890)	Katherine G. Blyley	350 F	Baptist ⁴
King College; Bristol, Tenn. (1867)	R. T. L. Liston ¹	248 C	Presbyterian
King's College; Wilkes-Barre, Pa. (1946)	Rev. George P. Benaglia	852 M	Catholic ⁴
Knox College; Galesburg, Ill. (1837)	Sharvy G. Umbeck	757 C	Private
Knoxville College; Knoxville, Tenn. (1875)	James A. Colston	416 C	Presbyterian
Lafayette College; Easton, Pa. (1826)	Ralph C. Hutchison	1,531 M	Presbyterian ⁴
La Grange College; La Grange, Ga. (1831)	Wrights G. Henry, Jr.	385 C	Methodist
Lake Erie College; Painesville, Ohio (1856)	Paul Weaver	385 F	Private
Lake Forest College; Lake Forest, Ill. (1857)	Ernest A. Johnson	678 C	Presbyterian ⁴
Lamar State College of Technology; Beaumont, Tex. (1923) ⁹	F. L. McDonald	4,403 C	State
Lambuth College; Jackson, Tenn. (1843)	Luther L. Gobbel	352 C	Methodist
Lander College; Greenwood, S. C. (1872)	B. M. Grier	325 C	County-Private
Lane College; Jackson, Tenn. (1882)	C. A. Kirkendoll	442 C	Christian M.E.
Langston University; Langston, Okla. (1897)	G. L. Harrison	454 C	State
La Salle College; Philadelphia, Pa. (1863)	Brother E. Stanislaus	3,544 M	Catholic
La Sierra College; Arlington, Calif. (1922)	Norval F. Pease	928 C	7th Day Adven.
La Verne College; La Verne, Calif. (1891)	Harold D. Fasnacht	385 C	Brethren ⁴
Lawrence College; Appleton, Wis. (1847)	Douglas M. Knight	788 C	Methodist ⁴
Lebanon Valley College; Annville, Pa. (1866)	F. K. Miller	605 C	Evan. Un. Breth.
Lehigh University; Bethlehem, Pa. (1865)	Martin D. Whitaker	3,122 M ⁴	Private
LeMoyne College; Memphis, Tenn. (1870)	Hollis F. Price	382 C	Congregational ⁴
Le Moyne College; Syracuse, N. Y. (1946)	V. Rev. Robert F. Grewen	1,100 C	Catholic
Lenoir Rhyne College; Hickory, N. C. (1891)	Voigt R. Cromer	887 C	Lutheran
Lesley College; Cambridge, Mass. (1909)	Trentwell M. White	360 F ⁶	Private
Lewis & Clark College; Portland, Oreg. (1867)	Morgan S. Odell	1,035 C	Presbyterian
Limestone College; Gaffney, S. C. (1845)	A. J. Eastwood	282 F	Private
Lincoln Memorial University; Harrogate, Tenn. (1897)	Robert L. Kincaid	545 C	Private
Lincoln University; Jefferson City, Mo. (1866)	Earl E. Dawson	898 C	State
Lincoln University; Lincoln University, Pa. (1854)	Horace M. Bond	317 M ⁵	Private ⁴⁴
Lindenwood College; St. Charles, Mo. (1827)	F. L. McCluer	481 F	Presbyterian
Linfield College; McMinnville, Oreg. (1849)	Harry L. Dillin	690 C	Baptist
Livingstone College; Salisbury, N. C. (1879)	William J. Trent	529 C	A. M. E. Zion
Long Beach State College; Long Beach, Calif. (1949)	P. Victor Peterson	7,120 C	State
Long Island University; Brooklyn, N. Y. (1926)	Adm. R. L. Conolly	3,225 C	Private
Longwood College; Farmville, Va. (1884)	Francis G. Lankford, Jr.	812 C	State
Loras College; Dubuque, Iowa (1839)	Msgr. D. V. Foley	1,162 M ⁵	Catholic

Institution, location and (date founded)

Chief executive¹Students²Control³

Loretto Heights College; Loretto, Colo. (1918)	Sister Frances Marie	702 F	Catholic ¹
Los Angeles County Art Institute; Los Angeles, Calif. (1918)	Millard Sheers ¹⁸	63 C	County
Los Angeles St. Coll. of App. Arts & Sciences; Los Angeles (1947) ⁹	Howard S. McDonald	8,268 C	State
Louisiana College; Pineville, La. (1906)	G. Earl Guinn	646 C	Baptist
Louisiana Polytechnic Institute; Ruston, La. (1894)	R. L. Ropp	2,674 C	State
Louisiana State University; Baton Rouge, La. (1860)	Troy H. Middleton	9,388 C	State
Louisville, University of; Louisville, Ky. (1798)	Philip G. Davidson	5,810 C	City
Lowell Technological Institute; Lowell, Mass. (1895)	Martin J. Lydon	928 C	State
Loyola College; Baltimore, Md. (1852)	V. Rev. Vincent F. Beatty	1,043 C ⁴⁵	Catholic ⁴
Loyola University; Chicago, Ill. (1870)	V. Rev. James F. Maguire	6,332 C	Catholic ⁴
Loyola University; Los Angeles, Calif. (1911)	Charles S. Casassa	1,438 M ⁶	Catholic ⁴
Loyola University; New Orleans, La. (1912)	V. Rev. W. P. Donnelly	2,758 C	Catholic ⁴
Luther College; Decorah, Iowa (1861)	J. W. Ylvisaker	1,028 C	Lutheran ⁴
Lycoming College; Williamsport, Pa. (1812)	D. Frederick Wertz	711 C	Methodist
Lynchburg College; Lynchburg, Va. (1903)	Orville W. Wake	618 C	Disc. of Christ ⁴
Macalester College; St. Paul, Minn. (1885)	Charles J. Turck	1,290 C	Presbyterian ⁴
MacMurray College; Jacksonville, Ill. (1846)	Louis W. Norris	526 F ⁹	Methodist ⁴
Madison College; Harrisonburg, Va. (1908)	G. Tyler Miller	1,078 F ⁹	State
Maine, University of; Orono, Maine (1865)	Arthur A. Hauck	3,455 C	State
Manchester College; North Manchester, Ind. (1889)	A. Blair Helman	780 C	Brethren
Manhattan College; New York, N. Y. (1853)	Brother A. Philip	2,623 M ⁵	Catholic
Mannhattanville College of the Sacred Heart; Purchase, N. Y. (1841)	Eleanor M. O'Byrne	619 F ⁹	Catholic ⁴
Marian College; Indianapolis, Ind. (1937)	Rev. Francis J. Reine	384 C	Catholic
Marietta College; Marietta, Ohio (1835)	W. Bay Irvine	824 C	Congregational ⁴
Marquette University; Milwaukee, Wis. (1881)	V. Rev. E. J. O'Donnell	9,064 C	Catholic
Marshall College; Huntington, W. Va. (1837)	Stewart H. Smith	3,418 C	State
Mary Baldwin College; Staunton, Va. (1842)	Richard C. Potter ¹⁴	259 F	Presbyterian ⁴
Mary Hardin-Baylor College; Belton, Tex. (1845)	Arthur Tyson	584 F	Baptist
Mary Manse College; Toledo, Ohio (1922)	Sister John Baptist	314 F	Catholic
Mary Washington College; Fredericksburg, Va. (1908) ⁴⁶	Grellet C. Simpson ¹¹	1,519 F	State
Marycrest College; Davenport, Iowa (1939)	Mother M. G. Upham	625 F	Catholic ⁴
Marygrove College; Detroit, Mich. (1910)	Sister M. Honora	752 F	Catholic ⁴
Maryknoll Seminary; Glen Ellyn, Ill. ⁷ (1949)	William P. North ¹⁰	216 M	Catholic
Maryknoll Teachers College; Maryknoll, N. Y. (1931) ⁹	Sister J. M. Lyons	142 F	Catholic ⁴
Maryland, University of; College Park, Md. (1807) ^{7,47}	Wilson H. Elkins	15,690 C	State
Maryland State College; Princess Anne, Md. (1886) ⁴⁸	John T. Williams	361 C	State
Maryland State Teachers College; Frostburg, Md. (1902)	R. Bowen Hardesty	609 C	State
Maryland State Teachers College; Salisbury, Md. (1925)	Wilbur Devilbiss	310 C	State
Maryland State Teachers College; Towson, Md. (1866)	Earle T. Hawkins	1,174 C	State
Marylhurst College; Marylhurst, Oreg. (1930)	Sister M. E. Clare	526 F	Catholic ⁴
Marymount College; Salina, Kans. (1922)	Mother M. H. Robben	380 F	Catholic ⁴
Marymount College; Tarrytown, N. Y. (1907)	Mother M. du Sacre Coeur	590 F	Catholic
Maryville College; Maryville, Tenn. (1819)	Ralph W. Lloyd	674 C	Presbyterian ⁴
Maryville College of the Sacred Heart; St. Louis, Mo. (1872) ⁴⁸	Mother M. L. Martinez	320 F	Catholic
Marywood College; Scranton, Pa. (1915)	Sister M. Eugenia	971 F	Catholic
Massachusetts, University of; Amherst, Mass. (1863)	J. Paul Mather	4,532 C	State
Massachusetts Institute of Technology; Cambridge, Mass. (1861)	James R. Killian, Jr.	5,622 C	Private
Massachusetts School of Art; Boston, Mass. (1873)	Gordon L. Reynolds	434 C	State
Massachusetts State Teachers College; Bridgewater, Mass. (1840)	Clement C. Maxwell	741 C	State
Massachusetts State Teachers College; Fitchburg, Mass. (1894)	Ralph F. Weston	780 C	State
Massachusetts State Teachers College; Framingham, Mass. (1839)	Martin F. O'Connor	626 F	State
Massachusetts State Teachers College; Lowell, Mass. (1894) ⁹	Daniel H. O'Leary	438 C	State
Massachusetts State Teachers College; North Adams, Mass. (1894)	Eugene L. Freel	200 C	State
Massachusetts State Teachers College; Salem, Mass. (1854) ⁸	Frederick A. Meier	769 C	State
McMurry College; Abilene, Tex. (1923)	Harold G. Cooke	731 C	Methodist
McNeese State College; Lake Charles, La. (1939)	Wayne N. Cusic	1,609 C	State
McPherson College; McPherson, Kans. (1887)	D. W. Bittinger	456 C	Brethren ⁴
Medical Evangelists, Coll. of; Loma Linda & Los Angeles, Calif. (1905)	G. T. Anderson	893 C	7th Day Adven.
Memphis State College; Memphis, Tenn. (1912)	J. Millard Smith	3,537 C	State
Mercer University; Macon, Ga. (1833)	George B. Connell	1,351 C	Baptist
Mercy College; Detroit, Mich. (1941)	Sister Mary Lucille	444 F	Catholic ⁴
Mercyhurst College; Erie, Pa. (1926)	Mother M. Eustace	340 F	Catholic ⁴
Meredith College; Raleigh, N. C. (1891)	Carlyle Campbell	542 F	Baptist
Merrimack College; North Andover, Mass. (1947)	Rev. Vincent A. McQuade	994 C	Catholic
Miami, University of; Coral Gables, Fla. (1925)	Jay F. W. Pearson	9,325 C	Private
Miami University; Oxford, Ohio (1809)	John D. Millett	5,115 C	State
Michigan, University of; Ann Arbor, Mich. (1817)	Harlan Hatcher	21,232 C	State
Michigan College of Mining & Technology; Houghton, Mich. (1885) ⁴⁹	J. R. Van Pelt	2,602 C	State
Michigan State Normal College. See Eastern Michigan College			
Michigan State University; East Lansing, Mich. (1855) ^{8, 60}	John A. Hannah	18,879 C	State
Middle Tennessee State College; Murfreesboro, Tenn. (1909) ⁸	Q. M. Smith	2,083 C	State
Middlebury College; Middlebury, Vt. (1800)	Samuel S. Stratton	1,235 C	Private

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Midland College; Fremont, Nebr. (1887)	Paul W. Dieckman	432 C	Lutheran ⁴
Midwestern University; Wichita Falls, Tex. (1922)	Travis A. White	1,444 C	State & City
Miles College; Birmingham, Ala. (1905) ^a	W. A. Bell	633 C	Christian M.E.
Millikin University; Decatur, Ill. (1901)	Paul L. McKay	1,003 C	Presbyterian ⁴
Mills College; Oakland, Calif. (1852)	Lynn T. White, Jr.	612 F ^a	Private
Millsaps College; Jackson, Miss. (1892)	H. E. Fisher, Jr.	823 C	Methodist ⁴
Milwaukee-Dowder College; Milwaukee, Wis. (1851)	John B. Johnson, Jr.	157 F	Private
Minnesota, University of; Duluth, Minn. (1947) ^{a1}	Raymond W. Darland ¹⁷	1,775 C	State
Minnesota, University of; Minneapolis, Minn. (1851) ^{a2}	J. L. Morrill	24,532 C	State
Minnesota State Teachers College; Bemidji, Minn. (1919)	C. R. Sattgast	1,001 C	State
Minnesota State Teachers College; Mankato, Minn. (1867)	C. L. Crawford	3,373 C	State
Minnesota State Teachers College; Moorhead, Minn. (1886)	A. L. Knoblauch	1,014 C	State
Minnesota State Teachers College; St. Cloud, Minn. (1869)	George F. Budd	2,063 C	State
Minnesota State Teachers College; Winona, Minn. (1858)	Nels Minn ⁹	856 C	State
Misericordia, College; Dallas, Pa. (1923)	Sister Mary Gonzaga	916 F	Catholic ⁴
Mississippi, University of; University, Miss. (1848)	J. D. Williams ¹¹	3,389 C	State
Mississippi College; Clinton, Miss. (1826)	D. M. Nelson	1,703 C	Baptist
Mississippi Southern College; Hattiesburg, Miss. (1910)	William D. McCain	3,383 C	State
Mississippi State College; State College, Miss. (1878)	Ben F. Hilbun	3,579 C	State
Mississippi State College for Women; Columbus, Miss. (1884)	Charles P. Hogarth	1,131 F	State
Missouri, University of; Columbia, Mo. (1839)	Elmer Ellis	9,117 C	State
Missouri Valley College; Marshall, Mo. (1889)	M. Earle Collins	425 C	Presbyterian
Monmouth College; Monmouth, Ill. (1853)	Robert W. Gibson	620 C	Presbyterian
Montana School of Mines; Butte, Mont. (1893)	Arthur E. Adami ¹⁴	249 C	State
Montana State College; Bozeman, Mont. (1893) ^a	Roland R. Renne	3,193 C	State
Montana State University; Missoula, Mont. (1893)	Carl McFarland	2,756 C	State
Moravian College; Bethlehem, Pa. (1742)	Raymond S. Hauptert	694 C	Moravian ⁴
Morehead State College; Morehead, Ky. (1923)	Adron Doran	1,120 C	State
Morehouse College. See Atlanta University System			
Morgan State College; Baltimore, Md. (1867)	Martin D. Jenkins	2,148 C	State
Morningside College; Sioux City, Iowa (1894)	J. Richard Palmer	912 C	Methodist
Morris Brown College; Atlanta, Ga. (1881)	John H. Lewis	798 C	A. M. E.
Mount Angel Seminary; St. Benedict, Oreg. (1889)	Rt. Rev. Damian Jentes	121 M	Catholic
Mount Angel Women's College; Mount Angel, Oreg. (1887)	Mother Mary G. Pienett	94 F	Catholic ⁴
Mount Holyoke College; South Hadley, Mass. (1837)	Richard G. Gettell	1,337 F	Private
Mount Mary College; Milwaukee, Wis. (1913)	Sister Mary J. Francis	915 F	Catholic ⁴
Mount Mercy College; Pittsburgh, Pa. (1929)	Mother Margaret Mary	392 F	Catholic ⁴
Mount St. Agnes College; Baltimore, Md. (1890)	Sister M. Cleophas	254 F	Catholic ⁴
Mount St. Joseph-on-the-Ohio, College of; Mt. St. Joseph, O. (1852)	Sister Mary Romana	497 F	Catholic ⁴
Mount St. Joseph Teachers College; Buffalo, N. Y. (1938)	Sister M. Hubert	290 F	Catholic ⁴
Mount St. Mary College; Hooksett, N. H. (1934)	Sister M. Mauritia	132 F	Catholic ⁴
Mount St. Mary's College; Emmitsburg, Md. (1808)	Rt. Rev. John L. Sheridan	564 M	Catholic
Mount St. Mary's College; Los Angeles, Calif. (1925)	Sister Rosemary	678 F	Catholic
Mount St. Scholastica College; Atchison, Kans. (1863)	Mother M. A. Schroll	441 F	Catholic ⁴
Mount St. Vincent, College of; New York, N. Y. (1847)	Sister Catharine Marie	525 F	Catholic ⁴
Mount Union College; Alliance, Ohio (1846)	Carl C. Bracy	762 C	Methodist ⁴
Muhlenberg College; Allentown, Pa. (1848)	J. Conrad Seegers	862 M	Lutheran ⁴
Mundelein College; Chicago, Ill. (1930)	Sister Mary John Michael	916 F	Catholic ⁴
Murray State College; Murray, Ky. (1922)	Ralph H. Woods	2,096 C	State
Muskingum College; New Concord, Ohio (1837)	Robert N. Montgomery	992 C	Presbyterian
National College of Education; Evanston, Ill. (1886)	K. Richard Johnson	725 C	Private
Nazareth College; Louisville, Ky. (1920)	Sister M. Gertrude	803 F	Catholic ⁴
Nazareth College; Nazareth, Mich. (1924)	Sister M. Kathleen	178 F	Catholic ⁴
Nazareth College; Rochester, N. Y. (1924)	Mother M. Helene	491 F	Catholic ⁴
Nebraska, University of; Lincoln & Omaha, Nebr. (1869)	Clifford Hardin ¹¹	8,094 C	State
Nebraska State Teachers College; Chadron, Nebr. (1911)	Barton L. Kline	571 C	State
Nebraska State Teachers College; Kearney, Nebr. (1905)	Herbert L. Cushing	1,770 C	State
Nebraska State Teachers College; Peru, Nebr. (1867)	Neal S. Gomon	695 C	State
Nebraska State Teachers College; Wayne, Nebr. (1910) ^a	W. A. Brandenburg	1,022 C	State
Nebraska Wesleyan University; Lincoln, Nebr. (1887)	A. Leland Forrest ¹¹	874 C	Methodist
Nevada, University of; Reno & Las Vegas, Nev. (1874)	Minard W. Stout	2,000 C	State
New Church, Academy of the; Bryn Athyn, Pa. (1877)	George de Charms	85 C	(63)
New England Conservatory of Music; Boston, Mass. (1867)	Harrison Keller	417 C	Private
New Hampshire, University of; Durham, N. H. (1866)	Eldon L. Johnson	3,124 C	State
New Hampshire State Teachers College; Keene, N. H. (1909)	Lloyd P. Young	669 C	State
New Hampshire State Teachers College; Plymouth, N. H. (1871)	Harold E. Hyde	410 C	State
New Jersey College for Women. See Douglass College			
New Jersey State Teachers College; Montclair, N. J. (1908)	E. DeAlton Partridge	2,053 C	State
New Jersey State Teachers College; Trenton, N. J. (1855)	Edwin L. Martin	963 C	State
New Mexico, University of; Albuquerque, N. Mex. (1889)	Tom L. Popejoy	4,804 C	State
New Mexico College of A & M Arts; State College, N. Mex. (1889)	Roger B. Corbett	2,089 C	State
New Mexico Highlands University; Las Vegas, N. Mex. (1892)	Thomas C. Donnelly	778 C	State

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
New Mexico Institute of Mining and Tech.; Socorro, N. Mex. (1889)	E. J. Workman	212 C	State
New Mexico Western College; Silver City, N. Mex. (1893)	J. Cloyd Miller	612 C	State
New Rochelle, College of; New Rochelle, N. Y. (1904)	Mother Dorothea Dunkerley	840 F	Catholic ⁴
New York, College of the City of			
Brooklyn College; Brooklyn, N. Y. (1930)	Harry D. Gideonse	9,677 C	City
City College; New York, N. Y. (1847)	Buell G. Gallagher	19,865 C	City
Hunter College; New York, N. Y. (1870)	George N. Shuster	7,893 F ⁵⁴	City
Queens College; Flushing, N. Y. (1937)	John J. Theobald	4,221 C	City ⁵⁵
New York, State University of; Albany, N. Y. (1948)	William S. Carlson	31,968 C	State
Agricultural & Technical Institute; Alfred, N. Y. (1908)	Paul B. Orvis ¹⁸	1,068 C	State
Agricultural & Technical Institute; Canton, N. Y. (1906)	Albert E. French ¹⁸	480 C	State
Agricultural & Technical Institute; Cobleskill, N. Y. (1911)	Ray L. Wheeler ¹⁸	314 C	State
Agricultural & Technical Institute; Delhi, N. Y. (1915)	William R. Kunsela ¹⁸	224 C	State
Agricultural & Technical Institute; Farmingdale, N. Y. (1916)	William A. Medesy ¹⁸	5,603 C	State
Agricultural & Technical Institute; Morrisville, N. Y. (1908)	Royson N. Whipple ¹⁸	455 C	State
College of Agriculture at Cornell U.; Ithaca, N. Y. (1904)	William I. Myers ¹²	1,973 C	State
College of Ceramics at Alfred U.; Alfred, N. Y. (1900)	John F. McMahon ¹²	404 C	State
College of Forestry; Syracuse, N. Y. (1911)	Hardy L. Shirley ¹²	609 M ⁵	State
College of Home Economics at Cornell U.; Ithaca, N. Y. (1900)	Helen G. Canoyer ¹²	695 F ⁶	State
College of Medicine at New York City; Brooklyn, N. Y. (1857)	Howard W. Potter ¹²	1,185 C	State
College of Medicine at Syracuse; Syracuse, N. Y. (1834)	W. W. Westerfeld ²⁰	521 C	State
College on Long Island; Oyster Bay, N. Y. (1957)	Leonard K. Olson ¹²	(⁵⁶)	State
Harpur College; Endicott, N. Y. (1946)	Glenn G. Bartle	788 C	State
Maritime College at Ft. Schuyler; New York, N. Y. (1874)	Vice Adm. C. T. Durgin	446 M	State
School of Ind. & Labor Rel. at Cornell U.; Ithaca, N. Y. (1945)	M. P. Catherwood ¹²	342 C	State
Teachers College; Albany, N. Y. (1844)	Evan R. Collins	2,462 C	State
Teachers College; Brockport, N. Y. (1841)	Donald M. Tower	1,273 C	State
Teachers College; Buffalo, N. Y. (1869)	Harvey M. Rice	2,877 C	State
Teachers College; Cortland, N. Y. (1863)	Donnal V. Smith	2,167 C	State
Teachers College; Fredonia, N. Y. (1867)	Harry W. Porter	739 C	State
Teachers College; Geneseo, N. Y. (1867)	Francis J. Moench	947 C	State
Teachers College; New Paltz, N. Y. (1886)	William J. Haggerty	1,439 C	State
Teachers College; Oneonta, N. Y. (1887)	Royal F. Netzer	1,059 C	State
Teachers College; Oswego, N. Y. (1861)	Foster S. Brown	1,616 C	State
Teachers College; Plattsburgh, N. Y. (1889)	George W. Angell	1,081 C	State
Teachers College; Potsdam, N. Y. (1889)	Frederick W. Crumb	1,018 C	State
Veterinary College at Cornell U.; Ithaca, N. Y. (1894)	William A. Hagan ¹²	215 C	State
New York University; New York, N. Y. (1831)	Carroll V. Newsom	31,142 C	Private
Newark College of Engineering; Newark, N. J. (1881)	Robert W. Van Houten	3,392 C	City & State
Newberry College; Newberry, S. C. (1856)	C. A. Kaufmann	464 C	Lutheran
Newcomb College; New Orleans, La. (1886) ⁵⁷	John R. Hubbard ¹²	810 F	Private
Newton College of the Sacred Heart; Newton, Mass. (1946)	Mother Gabrielle Husson	320 F	Catholic ⁴
Niagara University; Niagara Falls, N. Y. (1856)	V. Rev. Francis L. Meade	1,309 C	Catholic
North Carolina, Agr. & Tech. College of; Greensboro, N. C. (1891)	Warmoth T. Gibbs	2,818 C	State
North Carolina, University of; Chapel Hill, N. C. (1931) ⁵⁸	William Friday	13,126 Co	State
North Carolina State College; Raleigh, N. C. (1887)	Carey H. Bostian ¹¹	5,224 C	State
University of N. C. at Chapel Hill; Chapel Hill, N. C. (1789)	William B. Aycock ¹¹	6,634 C	State
Woman's College; Greensboro, N. C. (1891)	Gordon W. Blackwell ¹¹	2,261 F	State
North Carolina College; Durham, N. C. (1910)	Alfonso Elder	1,547 C	State
North Carolina State Teachers Coll.; Elizabeth City, N. C. (1891)	S. D. Williams	330 C	State
North Carolina State Teachers Coll.; Fayetteville, N. C. (1877)	Rudolph Jones	558 C	State
North Carolina State Teachers Coll.; Winston-Salem, N. C. (1892)	Francis L. Atkins	833 C	State
North Central College; Naperville, Ill. (1861) ⁵⁹	C. Harve Geiger	723 C	Evan. Un. Breth.
North Dakota, University of; Grand Forks, N. Dak. (1883)	George W. Starcher	3,419 C	State
North Dakota Agricultural College; Fargo, N. Dak. (1889)	Fred S. Hultz	2,800 C	State
North Dakota State Normal & Ind. College; Ellendale (1889)	T. S. Jenkins	228 C	State
North Dakota State Teachers College; Dickinson, N. Dak. (1917)	Charles E. Scott	443 C	State
North Dakota State Teachers College; Mayville, N. Dak. (1889) ⁶⁰	O. A. DeLong	326 C	State
North Dakota State Teachers College; Minot, N. Dak. (1913)	C. P. Lura	1,043 C	State
North Dakota State Teachers College; Valley City, N. Dak. (1890)	R. L. Lokken	593 C	State
North Georgia College; Dahlonega, Ga. (1873)	Merritt E. Hoag	703 C	State
North Texas State College; Denton, Tex. (1890)	J. C. Matthews	5,807 C	State
Northeast Louisiana State College; Monroe, La. (1928)	Lewis C. Slater	1,805 C	State
Northeast Missouri State Teachers College; Kirksville, Mo. (1867)	Walter H. Ryle	1,763 C	State
Northeastern State College; Tahlequah, Okla. (1851)	Harrell E. Garrison	2,306 C	State
Northeastern University; Boston, Mass. (1898)	Carl S. Ell	16,000 C	Private
Northern Baptist Theological Seminary; Chicago, Ill. (1913)	Charles W. Koller	298 C	Baptist ⁴
Northern Illinois State College; DeKalb, Ill. (1895)	Leslie A. Holmes	3,897 C	State
Northern Michigan College; Marquette, Mich. (1899)	Edgar L. Harden	1,032 C	State
Northern State Teachers College; Aberdeen, S. Dak. (1901)	J. Howard Kramer	1,089 C	State
Northwest Missouri State College; Maryville, Mo. (1905)	J. W. Jones	1,438 C	State
Northwest Nazarene College; Nampa, Idaho (1913)	John E. Riley	508 C	Nazarene

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Northwestern State College; Alva, Okla. (1897).....	Jesse W. Martin.....	700 C	State
Northwestern State College; Natchitoches, La. (1884).....	John S. Kyser.....	2,084 C	State
Northwestern University; Evanston & Chicago, Ill. (1851).....	J. Roscoe Miller.....	15,589 C	Private
Norwich University; Northfield, Vt. (1819).....	Maj. Gen. E. N. Harmon.....	771 M	Private
Notre Dame, College of; Belmont, Calif. (1868).....	Sister Catharine Julie.....	181 F	Catholic ⁴
Notre Dame College; Cleveland, Ohio (1922).....	Sister Mary Ralph.....	310 F	Catholic ⁴
Notre Dame College of Staten Island; Staten Island, N. Y. (1931).....	Mother Saint Egbert.....	250 F	Catholic ⁴
Notre Dame Du Lac, University of; Notre Dame, Ind. (1842).....	Rev. T. M. Hesburgh.....	5,631 M ⁶	Catholic ⁴
Notre Dame of Maryland, College of; Baltimore, Md. (1873).....	Sister Margaret Mary.....	329 F	Catholic ⁴
Notre Dame Seminary; New Orleans, La. (1923).....	Rev. Thomas U. Bolduc ¹⁰	84 M	Catholic
Oberlin College; Oberlin, Ohio (1833).....	William E. Stevenson.....	1,997 C	Private
Occidental College; Los Angeles, Calif. (1887).....	Arthur G. Coons.....	1,391 C	Presbyterian ⁴
Oglethorpe University; Atlanta, Ga. (1837).....	Donald R. Wilson.....	358 C	Private
Ohio State University; Columbus, Ohio (1870).....	Novice G. Fawcett.....	20,769 C	State
Ohio University; Athens, Ohio (1804).....	John C. Baker.....	6,849 C	State
Ohio Wesleyan University; Delaware, Ohio (1842).....	Arthur S. Flemming.....	1,949 C	Methodist ⁴
Oklahoma, University of; Norman & Oklahoma City, Okla. (1892).....	George L. Cross.....	10,212 C	State
Oklahoma Baptist University; Shawnee, Okla. (1910).....	John W. Raley.....	1,206 C	Baptist ⁴
Oklahoma City University; Oklahoma City, Okla. (1904).....	Clusitor Q. Smith.....	2,918 C	Methodist
Oklahoma College for Women; Chickasha, Okla. (1908).....	Dan Procter.....	757 F	State
Oklahoma State U. of Agr. & App. Sci.; Stillwater, Okla. (1891) ^{7a}	Oliver S. Willham.....	11,556 C	State
Olivet Nazarene College; Kankakee, Ill. (1907).....	Harold W. Reed.....	769 C	Nazarene
Omaha, University of; Omaha, Nebr. (1908).....	Milo Bail.....	2,208 C	City
Oregon, University of; Eugene, Oreg. (1872).....	O. Meredith Wilson.....	4,945 C	State
Oregon College of Education; Monmouth, Oreg. (1882).....	Roy E. Lieuallen.....	775 C	State
Oregon State College; Corvallis, Oreg. (1868).....	A. L. Strand.....	6,628 C	State
Ottawa University; Ottawa, Kans. (1865).....	Andrew B. Martin.....	440 C	Baptist ⁴
Otterbein College; Westerville, Ohio (1847).....	J. Gordon Howard.....	722 C	Evan. U. Breth.
Quachita Baptist College; Arkadelphia, Ark. (1885).....	Ralph A. Phelps, Jr.....	709 C	Baptist
Our Lady of Cincinnati College; Cincinnati, Ohio (1935).....	Sister M. Grace Grace.....	554 F	Catholic ⁴
Our Lady of the Elms, College of; Chicopee, Mass. (1928).....	Most Rev. C. J. Weldon.....	375 F	Private
Our Lady of the Lake College; San Antonio, Tex. (1896) ⁹	John L. McMahon.....	517 F ⁶	Catholic ⁴
Ozarks, College of the; Clarksville, Ark. (1834).....	Winslow S. Drummond.....	253 C	Presbyterian
Pacific, College of the; Stockton, Calif. (1851).....	Robert E. Burns.....	1,649 C	Methodist ⁴
Pacific Lutheran College; Tacoma, Wash. (1894).....	S. C. Eastvold.....	1,268 C	Lutheran
Pacific Union College; Angwin, Calif. (1882).....	R. W. Fowler.....	856 C	7th Day Adven.
Pacific University; Forest Grove, Oreg. (1849).....	Charles J. Armstrong.....	586 C	Congregational ⁴
Paine College; Augusta, Ga. (1882).....	E. Clayton Calhoun.....	270 C	Methodist ⁴
Palm Beach Junior College; Lake Worth, Fla. (1933).....	John I. Leonard.....	745 C	County
Pan American College; Edinburg, Texas (1927).....	R. P. Ward.....	1,522 C	County
Park College; Parkville, Mo. (1875).....	Robert E. Long.....	333 C	Presbyterian ⁴
Parsons College; Fairfield, Iowa (1875).....	Millard G. Roberts.....	510 C	Presbyterian ⁴
Pasadena College; Pasadena, Calif. (1902).....	Russell V. DeLong.....	731 C	Nazarene
Peabody Institute; Baltimore, Md. (1857).....	John R. Montgomery.....	277 C	Private
Pembroke College; Providence, R. I. (1891) ^{2c}	Nancy D. Lewis ¹²	3,629 Co	Private
Pembroke State College; Pembroke, N. C. (1887).....	Walter J. Gale.....	312 C	State
Pennsylvania, University of; Philadelphia, Pa. (1740).....	Gaylord P. Harnwell.....	11,134 C	Private
Pennsylvania Military College; Chester, Pa. (1821).....	Edward E. MacMorland.....	621 M	Private
Pennsylvania State College of Optometry; Philadelphia, Pa. (1919).....	Albert Fitch.....	154 C	Private
Pennsylvania State Teachers College; Bloomsburg, Pa. (1839).....	Harvey A. Andruss.....	1,053 C	State
Pennsylvania State Teachers College; California, Pa. (1852).....	Michael Duda.....	1,173 C	State
Pennsylvania State Teachers College; Cheyney, Pa. (1837).....	James H. Duckrey.....	562 C	State
Pennsylvania State Teachers College; Clarion, Pa. (1867).....	Paul G. Chandler.....	670 C	State
Pennsylvania State Teachers College; East Stroudsburg, Pa. (1893).....	Le Roy J. Koehler.....	1,039 C	State
Pennsylvania State Teachers College; Edinboro, Pa. (1861).....	Thomas R. Miller.....	758 C	State
Pennsylvania State Teachers College; Indiana, Pa. (1875).....	Willis E. Pratt.....	2,200 C	State
Pennsylvania State Teachers College; Kutztown, Pa. (1866).....	Q. A. W. Rohrbach.....	953 C	State
Pennsylvania State Teachers College; Lock Haven, Pa. (1870).....	Richard T. Parsons.....	745 C	State
Pennsylvania State Teachers College; Mansfield, Pa. (1857).....	James G. Morgan.....	636 C	State
Pennsylvania State Teachers College; Millersville, Pa. (1855).....	D. L. Biemesderfer.....	1,166 C	State
Pennsylvania State Teachers College; Shippensburg, Pa. (1871).....	Ralph E. Heiges.....	1,017 C	State
Pennsylvania State Teachers College; Slippery Rock, Pa. (1889).....	Norman N. Weisenfluh.....	891 C	State
Pennsylvania State Teachers College; West Chester, Pa. (1871).....	Charles S. Swope.....	2,005 C	State
Pennsylvania State University; University Park, Pa. (1855).....	Eric A. Walker.....	14,776 C	State
Philadelphia Textile Institute; Philadelphia, Pa. (1884).....	Bertrand W. Hayward.....	361 C	Private
Philander Smith College; Little Rock, Ark. (1868).....	M. LaFayette Harris.....	621 C	Methodist
Phillips University; Enid, Okla. (1906).....	Eugene S. Briggs.....	974 C	Disc. of Christ
Pittsburgh, University of; Pittsburgh, Pa. (1787).....	Edward H. Litchfield ¹¹	13,824 C	Private
Pomona College; Claremont, Calif. (1887).....	E. Wilson Lyon.....	1,017 C	Private
Portland, University of; Portland, Oreg. (1901).....	Rev. Howard J. Kenna.....	1,205 C	Catholic ⁴
Prairie View A & M College; Prairie View, Tex. (1876).....	E. B. Evans.....	2,800 C	State
Pratt Institute; Brooklyn, N. Y. (1887).....	Francis H. Horn.....	4,415 C	Private

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Presbyterian College; Clinton, S. C. (1880)	Marshall W. Brown	485 C	Presbyterian
Princeton University; Princeton, N. J. (1746)	Robert F. Goheen	3,524 M	Private
Principia College; Elmhurst, Ill. (1898)	William E. Morgan	480 C	Private ⁵⁹
Providence College; Providence, R. I. (1917)	V. Rev. Robert J. Slavin	1,787 M	Catholic
Puerto Rico, Catholic University of; Ponce, P. R. (1948)	M. Rev. J. E. McManus ¹¹	2,309 C	Catholic
Puerto Rico, Polytechnic Inst. of; See Inter American U. of P. R.			
Puerto Rico, University of; Rio Piedras, P. R. (1903) ⁹	Jaime Benitez ¹¹	14,224 C	Commonwealth
Puget Sound, College of; Tacoma, Wash. (1888)	R. Franklin Thompson	1,602 C	Methodist ⁴
Purdue University; Lafayette, Ind. (1869)	Frederick L. Hovde	13,060 C	State
Queens College; Charlotte, N. C. (1857)	Edwin R. Walker	482 F ⁶	Presbyterian ⁴
Queens College (NYC). See New York, College of the City of.			
Quincy College; Quincy, Ill. (1860)	Rev. Julian Woods	676 C	Catholic ⁴
Radcliffe College; Cambridge, Mass. (1879) ³⁰	Wilbur K. Jordan	1,402 Co	Private
Radford College; Radford, Va. (1913) ³¹	Charles K. Martin, Jr.	787 Co	State
Randolph-Macon College; Ashland, Va. (1830)	J. Earl Moreland	508 M	Methodist ⁴
Randolph-Macon Woman's College; Lynchburg, Va. (1891)	W. F. Quillian, Jr.	675 F	Methodist ⁴
Redlands, University of; Redlands, Calif. (1907)	George H. Armacost	1,322 C	Baptist ⁴
Reed College; Portland, Oreg. (1909)	Richard H. Sullivan	561 C	Private
Regis College; Denver, Colo. (1887)	V. Rev. Richard F. Ryan	852 M ⁵	Catholic ⁴
Regis College for Women, Weston, Mass. (1927)	Sister Mary Alice	604 F	Catholic ⁴
Rensselaer Polytechnic Institute; Troy, N. Y. (1824)	Livingston W. Houston	3,198 M ⁵	Private
Rhode Island, University of; Kingston, R. I. (1892)	Carl R. Woodward	2,411 C	State
Rhode Island College of Education; Providence, R. I. (1854)	William C. Gaige	631 C	State
Rhode Island School of Design; Providence, R. I. (1877)	John R. Frazier	771 C	Private
Rice Institute; Houston, Tex. (1912)	William V. Houston	1,797 C	Private
Richmond, University of; Richmond, Va. (1830)	George M. Modlin	1,763 Co	Baptist ⁴
Ricks College; Rexburg, Idaho (1888)	John L. Clarke	703 C	Latter-day Saints
Rider College; Trenton, N. J. (1865)	Franklin F. Moore	1,733 C	Private
Ripon College; Ripon, Wis. (1851)	Fred O. Pinkham	587 C	Private
Rivier College; Nashua, N. H. (1933)	Sister Adelard Marie	331 F ⁶	Catholic ⁴
Roanoke College; Salem, Va. (1842)	H. Sherman Oberly	515 C	Lutheran ⁴
Rochester, University of; Rochester, N. Y. (1850)	Cornelis W. de Kiewiet	5,231 C	Private
Rockford College & Rockford Men's College; Rockford, Ill. (1847)	Leland H. Carlson	314 Co	Private
Rockhurst College; Kansas City, Mo. (1910)	Rev. M. E. Van Ackeren	1,157 M ⁵	Catholic
Rocky Mountain College; Billings, Mont. (1883)	Herbert W. Hines	347 C	(⁵⁹)
Rollins College; Winter Park, Fla. (1885)	Hugh F. McKean	620 C	Private
Roosevelt University; Chicago, Ill. (1945)	Edward J. Sparling	3,942 C	Private
Rosary College; River Forest, Ill. (1848)	Sister M. Timothea	796 F ⁶	Catholic
Rosary Hill College; Buffalo, N. Y. (1947)	Sister M. Angela	365 F	Catholic ⁴
Rose Polytechnic Institute; Terre Haute, Ind. (1874)	F. L. Wilkinson, Jr.	401 M	Private
Rosemont College of Holy Child Jesus; Rosemont, Pa. (1922)	Mother Mary Chrysostom	430 F	Catholic ⁴
Russell Sage College; Troy, N. Y. (1916)	Lewis A. Froman	727 F	Private
Rust College; Holly Springs, Miss. (1866)	L. M. McCoy	236 C	Methodist
Rutgers University; New Brunswick, N. J. (1766) ³⁰	Lewis W. Jones	8,265 Co	State
Sacramento State College; Sacramento, Calif. (1947)	Guy A. West	5,022 C	State
Sacred Heart, College of the; Santurce, P. R. (1935)	Mother R. A. Arsuaga	165 F	Catholic
St. Ambrose College; Davenport, Iowa (1882)	Rt. Rev. William J. Collins	1,029 M ⁵	Catholic
St. Anselm's College; Manchester, N. H. (1889)	Rt. Rev. B. C. Dolan ¹¹	835 M ⁵	Catholic ⁴
St. Augustine's College; Raleigh, N. C. (1867)	James A. Boyer	414 C	Episcopal
St. Benedict, College of; St. Joseph, Minn. (1913)	Mother Richarda Peters	342 F	Catholic ⁴
St. Benedict's College; Atchison, Kansas (1857)	Rt. Rev. Cuthbert McDonald	600 M	Catholic ⁴
St. Bernard College; St. Bernard, Ala. (1893)	Rt. Rev. Bede Luiibel	302 M ⁵	Catholic ⁴
St. Bernardine of Siena College; Loudonville, N. Y. (1937)	Rev. Edmund F. Christy	1,479 M ⁵	Catholic ⁴
St. Bonaventure University; St. Bonaventure, N. Y. (1856)	V. Rev. Brian Lhota	1,674 C	Catholic ⁴
St. Catherine College of; St. Paul, Minn. (1905)	Sister Mary William	961 F	Catholic ⁴
St. Edward's Seminary; Kenmore, Wash. (1930)	V. Rev. John R. Sullivan	159 M	Catholic
St. Elizabeth, College of; Covent Station, N. J. (1899)	Sister Hildegard Marie	486 F	Catholic
St. Francis, College of; Joliet, Ill. (1920)	Sister Mary Elvira	476 F	Catholic ⁴
St. Francis College; Loretto, Pa. (1847)	Rev. Kevin R. Keelan	659 C	Catholic ⁴
St. John's College; Annapolis, Md. (1696)	Richard D. Weigle	150 C	Private
St. John's College; Camarillo and Los Angeles, Calif. (1926)	V. Rev. J. W. Richardson	128 M	Catholic
St. John's University; Brooklyn, N. Y. (1870)	V. Rev. John A. Flynn	7,424 C	Catholic ⁴
St. John's University; Collegeville, Minn. (1857)	Rt. Rev. Dworschak	1,000 M	Catholic
St. Joseph College; Emmitsburg, Md. (1809)	Sister Hilda	307 F	Catholic ⁴
St. Joseph College; West Hartford, Conn. (1932)	Mother M. Ethelreda	402 F	Catholic ⁴
St. Joseph's College; Collegeville, Ind. (1889)	Rev. R. H. Gross	830 M	Catholic
St. Joseph's College; Philadelphia, Pa. (1851)	V. Rev. J. J. Bluet	1,151 M	Catholic ⁴
St. Joseph's College for Women; Brooklyn, N. Y. (1916)	Sister Vincent Therese	403 F	Catholic ⁴
St. Lawrence University; Canton, N. Y. (1856)	Eugene G. Bewkes	1,294 C	Private
St. Louis University; St. Louis, Mo. (1818) ³⁰	V. Rev. Paul C. Reinert	9,028 C	Catholic ⁴
St. Martin's College; Olympia, Wash. (1895)	V. Rev. Damian Glenn	235 M	Catholic
St. Mary College; Xavier, Kans. (1923)	Arthur M. Murphy	418 F	Catholic ⁴

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
St. Mary of the Springs, College of; Columbus, Ohio (1911)	Sister M. Angelita	309 F	Catholic ⁴
St. Mary-of-the-Wasatch, College of; Salt Lake City, Utah (1926)	Sister Marie de Lourdes	111 F	Catholic ⁴
St. Mary-of-the-Woods Coll.; St. Mary-of-the-Woods, Ind. (1840)	Sister Francis Joseph	397 F	Catholic ⁴
St. Mary's College; Notre Dame, Ind. (1844)	Sister M. Madeleva	954 F	Catholic
St. Mary's College; St. Mary's College, Calif. (1863)	Rev. Brother S. Albert	488 M	Catholic
St. Mary's College; Winona, Minn. (1913)	Brother I. Basil	678 M	Catholic ⁴
St. Mary's Dominican College; New Orleans, La. (1910)	Sister Mary Louise	357 F	Catholic ⁴
St. Mary's Seminary & University; Baltimore, Md. (1791)	V. Rev. L. P. McDonald	800 M	Catholic
St. Mary's University; San Antonio, Tex. (1852)	V. Rev. W. J. Buehler	1,918 M	Catholic ⁴
St. Michael's College; Winooski Park, Vt. (1904)	V. Rev. F. E. Moriarty	703 M ⁵	Catholic ⁴
St. Norbert College; West De Pere, Wis. (1898)	V. Rev. D. M. Burke	776 C	Catholic ⁴
St. Olaf College; Northfield, Minn. (1874)	Clemens M. Granskou	1,745 C	Lutheran ⁴
St. Patrick's Seminary; Menlo Park, Calif. (1898)	V. Rev. T. C. Mulligan	141 M	Catholic
St. Paul Seminary; St. Paul, Minn. (1896)	Rev. Rudolph G. Bandas ¹⁰	352 M	Catholic
St. Paul's College; Lawrenceville, Va. (1888) ^{6a}	Earl H. McClenney	466 C	Episcopal
St. Peter's College; Jersey City, N. J. (1872)	Rev. J. J. Shanahan	1,260 M ⁵	Catholic
St. Rose, College of; Albany, N. Y. (1920)	Sister C. Francis	964 F	Catholic ⁴
St. Scholastica, College of; Duluth, Minn. (1912)	Mother Martina Hughes	356 F	Catholic ⁴
St. Teresa, College of; Kansas City, Mo. (1916)	Sister M. B. O'Neill	473 F	Catholic ⁴
St. Teresa, College of; Winona, Minn. (1907)	Sister M. C. Bowe	656 F	Catholic ⁴
St. Thomas, College of; St. Paul, Minn. (1885)	V. Rev. J. P. Shannon	1,396 M	Catholic ⁴
St. Thomas, University of; Houston, Tex. (1947)	Rev. V. J. Guinan	400 C	Catholic
St. Vincent College; Latrobe, Pa. (1846)	Rev. Q. L. Schaut	880 M	Catholic
St. Xavier College; Chicago, Ill. (1847)	Mother M. Huberta	469 F	Catholic ⁴
Salem Academy & College; Winston-Salem, N. C. (1772)	Dale H. Gramley	365 F	Moravian
Salve Regina College; Newport, R. I. (1934)	Mother Mary Hilda	300 F	Catholic ⁴
Sam Houston State Teachers College; Huntsville, Tex. (1879)	Harmon Lowman	2,759 C	State
San Diego College for Women; San Diego, Calif. (1949)	Mother Frances Danz	283 F	Catholic ⁴
San Diego State College; San Diego, Calif. (1897)	Malcolm A. Love	6,861 C	State
San Francisco, University of; San Francisco, Calif. (1855)	Rev. J. F. X. Connolly	3,396 M ⁵	Catholic ⁴
San Francisco College for Women; San Francisco, Calif. (1924)	Mother Catherine Parks	447 F	Catholic ⁴
San Francisco State College; San Francisco, Calif. (1899)	J. Paul Leonard	9,040 C	State
San Jose State College; San Jose, Calif. (1857)	John T. Wahlquist	8,440 C	State
Santa Clara, University of; Santa Clara, Calif. (1851)	Rev. Herman J. Hauck	1,268 M ⁵	Catholic
Sarah Lawrence College; Bronxville, N. Y. (1926)	Harold Taylor	395 F	Private
Savannah State College; Savannah, Ga. (1890)	W. K. Payne	941 C	State
Scarritt College for Christian Workers; Nashville, Tenn. (1892)	Foye Gibson	106 C	Methodist
Scranton, University of; Scranton, Pa. (1888)	V. Rev. John J. Long	1,704 M ⁵	Catholic ⁴
Scripps College; Claremont, Calif. (1926)	Frederick Hard	223 F	Private
Seattle Pacific College; Seattle, Wash. (1891)	C. Hoyt Watson	960 C	Methodist
Seattle University; Seattle, Wash. (1891)	V. Rev. A. A. Lemieux	3,128 C	Catholic ⁴
Seton Hall University; South Orange, N. J. (1856)	Rt. Rev. John L. McNulty	8,789 C	Catholic
Seton Hill College; Greensburg, Pa. (1918)	Rev. William G. Ryan	460 F	Catholic
Shaw University; Raleigh, N. C. (1865)	William R. Strassner	560 C	Baptist ⁴
Shepherd College, Shepherdstown, W. Va. (1871)	Oliver S. Ikenberry	600 C	State
Shorter College; Rome, Ga. (1873)	George A. Christenberry	218 C	Baptist ⁴
Siena College; Memphis, Tenn. (1923)	Sister Clarita	242 F ⁶	Catholic ⁴
Siena Heights College; Adrian, Mich. (1919)	Rev. Mother Mary Gerald	541 F	Catholic ⁴
Simmons College; Boston, Mass. (1899)	William Edgar Park	1,346 F ⁶	Private
Simpson College; Indianola, Iowa (1860)	William E. Kerstetter	610 C	Methodist ⁴
Skidmore College; Saratoga Springs, N. Y. (1911)	Val H. Wilson	1,085 F	Private
Smith College; Northampton, Mass. (1871)	Benjamin F. Wright	2,337 F	Private
Snow College; Ephraim, Utah (1888) ^{6a}	J. Elliot Cameron ¹⁸	298 C	State
South, University of; Sewanee, Tenn. (1858)	Edward McCrady	554 M	Episcopal
South Carolina, University of; Columbia, S. C. (1801)	Donald Russell	4,338 C	State
South Carolina State College; Orangeburg, S. C. (1896)	Benner C. Turner	1,452 C	State
South Dakota, University of; Vermillion, S. Dak. (1882)	I. D. Weeks	2,042 C	State
South Dakota School of Mines & Tech.; Rapid City (1885)	F. L. Partlo	772 C	State
South Dakota State College of A & M Arts; Brookings, S. Dak. (1884)	John W. Headley	3,014 C	State
Southeast Missouri State College; Cape Girardeau, Mo. (1873)	Mark Scully	1,595 C	State
Southeastern Louisiana College; Hammond, La. (1925)	L. H. Dyson	1,414 C	State
Southeastern State College; Durant, Okla. (1909)	A. E. Shearer	1,438 C	State
Southern California, University of; Los Angeles, Calif. (1880) ⁹	Fred D. Fagg, Jr. ^{6b}	16,942 C	Private
Southern Illinois University; Carbondale, Ill. (1869)	Delyte W. Morris	5,468 C	State
Southern Methodist University; Dallas, Tex. (1911)	Willis M. Tate	5,681 C	Methodist
Southern Missionary College; Colledale, Tenn. (1893)	T. W. Walters	455 C	7th Day Adven.
Southern Oregon College of Education; Ashland, Oreg. (1926)	Elmo N. Stevenson	918 C	State
Southern, State College; Magnolia, Ark. (1909)	Dolph Camp	1,154 C	State
Southern University & A & M College; Baton Rouge, La. (1880)	Felton G. Clark	4,315 C	State
Southern Utah, College of; Cedar City, Utah (1897) ^{6a}	Royden C. Braithwaite	435 C	State
Southwest Missouri State College; Springfield, Mo. (1906)	Roy Ellis	2,374 C	State
Southwest Texas State Teachers College; San Marcos, Tex. (1899) ⁹	J. G. Flowers	2,155 C	State

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Southwestern at Memphis; Memphis, Tenn. (1848).....	Peyton N. Rhodes.....	555 C	Presbyterian
Southwestern College; Winfield, Kans. (1885).....	C. Orville Strohl.....	538 C	Methodist ⁴
Southwestern Louisiana Institute; Lafayette, La. (1898).....	Joel L. Fletcher.....	3,271 C	State
Southwestern State College; Weatherford, Okla. (1903).....	R. H. Burton.....	1,536 C	State
Southwestern University, Georgetown, Tex. (1840).....	William C. Finch.....	516 C	Methodist ⁴
Spelman College. See Atlanta University System.			
Spring Hill College; Mobile, Ala. (1830).....	V. Rev. A. C. Smith.....	1,082 C	Catholic ⁴
Springfield College; Springfield, Mass. (1885).....	Donald C. Stone.....	1,135 C	Private
Stanford University; Stanford, Calif. (1885).....	J. E. W. Sterling.....	8,089 C	Private
Stephen F. Austin State College; Nacogdoches, Tex. (1923).....	Paul L. Boynton.....	1,786 C	State
Stetson University; DeLand, Fla. (1883).....	J. Ollie Edmunds.....	1,350 C	Baptist ⁴
Stevens Institute of Technology; Hoboken, N. J. (1870).....	Jess H. Davis.....	1,804 M	Private
Stillman College, Tuscaloosa, Ala. (1876).....	Samuel B. Hay.....	270 C	Presbyterian
Stout State College; Menomonie, Wis. (1893).....	Verne C. Fryklund.....	1,165 C	State
Suffolk University; Boston, Mass. (1906).....	Robert J. Munce.....	1,131 C	Private
Sul Ross State College; Alpine, Tex. (1921).....	Bryan Widental.....	827 C	State
Susquehanna University; Selingsgrove, Pa. (1858).....	G. Morris Smith.....	503 C	Lutheran ⁴
Swarthmore College; Swarthmore, Pa. (1864).....	Courtney Smith.....	890 C	Quaker ⁴
Sweet Briar College; Sweet Briar, Va. (1901).....	Anne G. Pannell.....	524 F	Private
Syracuse University; Syracuse, N. Y. (1870) ⁶⁸	William P. Tolley ¹¹	13,220 C	Private
Talladega College; Talladega, Ala. (1867).....	Arthur D. Gray.....	319 C	Congregational ⁴
Tampa, University of; Tampa, Fla. (1931).....	Ellwood C. Nance.....	1,452 C	Private
Tarkio College; Tarkio, Mo. (1883).....	Rev. Clyde H. Canfield.....	280 C	Presbyterian
Taylor University; Upland, Ind. (1846).....	Evan H. Bergwall.....	524 C	Private
Temple University; Philadelphia, Pa. (1884).....	Robert L. Johnson.....	12,557 C	Private
Tennessee, University of; Knoxville, Tenn. (1794).....	G. E. Brehm.....	6,381 C	State
Tennessee Agr. & Ind. State University; Nashville, Tenn. (1912).....	Walter S. Davis.....	2,598 C	State
Tennessee Polytechnic Institute; Cookeville, Tenn. (1915).....	Everett Derryberry.....	2,500 C	State
Texas, A & M College of; College Station, Tex. (1876).....	D. W. Williams ¹⁴	6,433 M	State
Texas, University of; Austin, Tex. (1881) ⁶⁷	Logan Wilson.....	16,697 C ⁶⁸	State
Texas Christian University; Fort Worth, Tex. (1873).....	M. E. Sadler.....	5,719 C	Disc. of Christ ⁴
Texas College; Tyler, Tex. (1894).....	D. R. Glass.....	591 C	Christian M. E.
Texas College of Arts & Industries; Kingsville, Tex. (1925).....	Ernest H. Poteet.....	2,605 C	State
Texas Lutheran College; Seguin, Tex. (1891).....	Edward A. Sagebiel.....	490 C	Lutheran
Texas Southern University, Houston, Tex. (1947).....	S. M. Nabrit.....	2,886 C	State
Texas State College for Women; Denton, Tex. (1903).....	John A. Guinn.....	2,074 F	State
Texas Technological College; Lubbock, Tex. (1923).....	E. N. Jones.....	7,394 C	State
Texas Wesleyan College; Fort Worth, Tex. (1890).....	Law Sone.....	1,177 C	Methodist
Texas Western College; El Paso, Tex. (1913) ⁶⁹	Dysart E. Holcomb.....	3,523 C	State
Thiel College; Greenville, Pa. (1870).....	Frederic B. Irvin.....	657 C	Lutheran
Tift College, Forsyth, Ga. (1849).....	Carey T. Vinzant.....	390 F	Baptist
Toledo, University of; Toledo, Ohio (1872).....	Asa S. Knowles.....	4,795 C	City
Tougaloo Southern Christian College; Tougaloo, Miss. (1869).....	Samuel C. Kincheloe.....	389 C	Cong. & D. of C. ⁴
Transylvania College; Lexington, Ky. (1780).....	Frank A. Rose.....	502 C	Christian ⁴
Trinity College; Burlington, Vt. (1925) ⁹	Mother M. Emmanuel.....	173 F	Catholic ⁴
Trinity College; Hartford, Conn. (1823).....	Albert C. Jacobs.....	931 M	Private
Trinity College; Washington, D. C. (1897).....	Sister Mary Patrick.....	503 F	Catholic ⁴
Trinity University; San Antonio, Tex. (1869).....	James W. Laurie.....	1,433 C	Presbyterian ⁴
Tufts University; Medford & Boston, Mass. (1852) ⁴²	Nils Y. Wessell.....	3,976 C	Private
Tulane University; New Orleans, La. (1834) ⁶⁷	Rufus C. Harris.....	6,244 Co	Private
Tulsa, University of; Tulsa, Okla. (1894).....	Clarence I. Pontius.....	5,176 C	Presbyterian ⁴
Tusculum College; Greeneville, Tenn. (1794).....	Raymond C. Rankin.....	308 C	Presbyterian ⁴
Tuskegee Institute; Tuskegee Institute, Ala. (1881).....	L. H. Foster.....	1,858 C	Private
Union College; Barbourville, Ky. (1879).....	Conway Boatman.....	673 C	Methodist
Union College; Lincoln, Nebr. (1891).....	H. C. Hartman.....	874 C	7th Day Adven.
Union College & University; Schenectady & Albany, N. Y. (1795).....	Carter Davidson ⁷⁰	2,553 M ⁶	Private
Union University; Jackson, Tenn. (1825).....	Warren F. Jones.....	552 C	Baptist
U. S. Air Force Academy; Denver, Colo. (1955) ⁷⁴	Maj. Gen. J. E. Briggs ²¹	509 M ⁷⁵	Federal
U. S. Coast Guard Academy; New London, Conn. (1876).....	R. Adm. F. A. Leamy ²¹	500 M	Federal
U. S. Merchant Marine Academy; Kings Point, N. Y. (1938).....	Rear Adm. G. McLintock ²¹	900 M	Federal
U. S. Military Academy; West Point, N. Y. (1802).....	Maj. Gen. G. H. Davidson ²¹	2,384 M	Federal
U. S. Naval Academy; Annapolis, Md. (1845).....	R. Adm. W. Smedberg ²¹	3,578 M	Federal
U. S. Naval Postgraduate School; Monterey, Calif. (1909).....	R. Adm. Earl E. Stone ²¹	492 C	Federal
Upper Iowa University; Fayette, Iowa (1857).....	Eugene E. Garbee.....	359 C	Private
Upsala College; East Orange, N. J. (1893).....	E. B. Lawson.....	1,350 C	Lutheran
Ursinus College; Collegeville, Pa. (1869).....	Norman E. McClure.....	710 C	Evan. & Ref. ⁴
Ursuline College; Louisville, Ky. (1938).....	Rev. Mother Cosma.....	406 F	Catholic ⁴
Ursuline College for Women; Cleveland, Ohio (1871).....	Mother Marie Sands.....	253 F	Catholic
Utah, University of; Salt Lake City, Utah (1850).....	Albert R. Olpin.....	8,888 C	State
Utah State U. of Agr. & Applied Science; Logan, Utah (1888) ⁶⁴	Daryl Chase.....	3,875 C	State
Valdosta State College; Valdosta, Ga. (1906).....	J. Ralph Thaxton.....	520 C	State
Valparaiso University; Valparaiso, Ind. (1859).....	O. P. Kretzmann.....	2,135 C	Lutheran ⁴

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Vanderbilt University; Nashville, Tenn. (1872)	Harvie Branscomb ²¹	3,283 C	Private
Vassar College; Poughkeepsie, N. Y. (1861)	Sarah Gibson Blanding	1,435 F	Private
Vermont, University of; Burlington, Vt. (1791)	Carl W. Borgmann	3,040 C	State
Villa Maria College; Erie, Pa. (1925)	Mother M. Aurelia	401 F	Catholic ⁴
Villanova University; Villanova, Pa. (1842)	Rev. J. Donnellon	3,310 M ⁵	Catholic ⁴
Virginia, University of; Charlottesville, Va. (1819) ⁴⁶	Colgate W. Darden, Jr.	4,605 M ⁵	State
Virginia Military Institute; Lexington, Va. (1839)	Maj. Gen. W. H. Milton ²¹	848 M	State
Virginia Polytechnic Institute; Blacksburg & Norfolk, Va. (1872) ⁶¹	Walter S. Newman	4,102 C	State
Virginia State College; Petersburg & Norfolk, Va. (1882)	Robert P. Daniel	2,465 C	State
Virginia Union University; Richmond, Va. (1865)	Samuel DeW. Proctor	851 C	Baptist ⁴
Viterbo College; La Crosse, Wis. (1931)	Sister M. Francesca	268 F	Catholic ⁴
Wabash College; Crawfordsville, Ind. (1832)	Byron K. Trippet	565 M	Private
Wagner Lutheran College; Staten Island, N. Y. (1883)	David M. Delo	1,417 C	Lutheran ⁴
Wake Forest College; Winston-Salem, N. C. (1834)	Harold W. Tribble	2,098 C	Baptist
Walla Walla College; College Place, Wash. (1892)	P. W. Christian	1,338 C	7th Day Adven.
Warburg College; Waverly, Iowa (1852)	C. H. Becker	801 C	Lutheran
Washburn University; Topeka, Kans. (1865)	Bryan S. Stoffer	1,554 C	City
Washington, State College of; Pullman, Wash. (1890)	C. Clement French	4,985 C	State
Washington, University of; Seattle, Wash. (1861) ⁸	Henry Schmitz	14,947 C	State
Washington & Jefferson College; Washington, Pa. (1781)	Boyd C. Patterson	625 M	Private
Washington & Lee University; Lexington, Va. (1749)	Francis P. Gaines	994 M	Private
Washington College; Chestertown, Md. (1782)	Daniel Z. Gibson	444 C	Private
Washington Missionary College; Washington, D. C. (1904)	William H. Shephard	783 C	7th Day Adven.
Washington University; St. Louis, Mo. (1853)	Ethan A. H. Shepley ¹¹	13,107 C	Private
Wayland Baptist College; Plainview, Texas (1908)	A. Hope Owen	448 C	Baptist ⁴
Wayne State University; Detroit, Mich. (1868)	Clarence B. Hilberry	15,165 C	State ⁷¹
Waynesburg College; Waynesburg, Pa. (1849)	Paul R. Stewart	672 C	Presbyterian ⁴
Webb Institute of Naval Architecture; Glen Cove, N. Y. (1889)	R. Adm. F. E. Haeberle ¹²	73 M	Private
Webster College; Webster Groves, Mo. (1916) ³⁸	Sister Mariella	370 F	Catholic ⁴
Wellesley College; Wellesley, Mass. (1870)	Margaret Clapp	1,711 F	Private
Wells College; Aurora, N. Y. (1868)	Louis J. Long	373 F	Private
Wesleyan College; Macon, Ga. (1836)	B. Joseph Martin	463 F ⁸	Methodist
Wesleyan University; Middletown, Conn. (1831)	Victor L. Butterfield	882 M ⁵	Private
West Liberty State College; West Liberty, W. Va. (1837)	Paul N. Elbin	679 C	State
West Texas State College; Canyon, Tex. (1910)	James P. Cornette	2,765 C	State
West Virginia Institute of Technology; Montgomery, W. Va. (1895)	William B. Axtell	840 C	State
West Virginia State College; Institute, W. Va. (1891)	William J. L. Wallace	1,901 C	State
West Virginia University; Morgantown, W. Va. (1867)	Irvin Stewart	5,736 C	State
West Virginia Wesleyan College; Buckhannon, W. Va. (1890)	Stanley H. Martin	735 C	Methodist ¹
Western Carolina College; Cullowhee, N. C. (1889)	W. E. Bird	1,124 C	State
Western College for Women; Oxford, Ohio (1853)	Herrick B. Young	320 F	Private
Western Illinois State College; Macomb, Ill. (1899)	Frank A. Beu	2,832 C	State
Western Kentucky State College; Bowling Green, Ky. (1906)	Kelly Thompson	2,363 C	State
Western Maryland College; Westminster, Md. (1867)	Lowell S. Ensor	620 C	Methodist
Western Michigan College; Kalamazoo, Mich. (1903)	Paul V. Sangren	6,220 C	State
Western Montana College of Education; Dillon, Mont. (1893)	Herbert L. Steele	303 C	State
Western Reserve University; Cleveland, Ohio (1826)	John S. Mills	6,959 C	Private
Western State College of Colorado; Gunnison, Colo. (1901)	P. P. Mickelson	884 C	State
Western Washington Coll. of Education; Bellingham, Wash. (1899)	W. W. Haggard	1,991 C	State
Westmar College; Le Mars, Iowa (1890)	H. H. Kalas	436 C	Evan. Un. Breth.
Westminster College; Fulton, Mo. (1851)	Robert L. D. Davidson	412 M	Presbyterian
Westminster College; New Wilmington, Pa. (1852)	Will W. Orr	1,003 C	Presbyterian ⁴
Westminster College; Salt Lake City, Utah (1875)	Frank E. Duddy, Jr.	387 C	Presb. & Meth. ⁴
Westminster Theological Seminary; Philadelphia, Pa. (1929)	Ned B. Stonehouse ²²	70 M	Private
Wheaton College; Norton, Mass. (1834)	A. Howard Meneely	540 F	Private
Wheaton College; Wheaton, Ill. (1860)	V. Raymond Edman	1,778 C	Private
Wheelock College; Boston, Mass. (1888)	Frances Mayfarth	361 F ⁸	Private
Whitman College; Walla Walla, Wash. (1859)	Chester C. Maxey	778 C	Private
Whittier College; Whittier, Calif. (1901)	Paul S. Smith	984 C	Quaker ⁴
Whitworth College; Spokane, Wash. (1890)	Frank F. Warren	860 C	Presbyterian ¹
Wichita, University of; Wichita, Kans. (1895)	Harry F. Corbin	5,026 C	City
Wiley College; Marshall, Tex. (1873)	J. S. Scott	461 C	Methodist
Wilkes College; Wilkes-Barre, Pa. (1933)	Eugene S. Farley	1,011 C	Private
Willamette University; Salem, Oreg. (1842)	G. Herbert Smith	1,005 C	Methodist ⁴
William and Mary, College of; Williamsburg, Va. (1693)	A. D. Chandler	1,739 C	State
William Jewell College; Liberty, Mo. (1849)	Walter P. Binns	725 C	Baptist ⁴
William Smith College. See Hobart			
Williams College; Williamstown, Mass. (1793)	James P. Baxter, 3rd.	1,036 M	Private
Wilmington College; Wilmington, Ohio (1870)	Samuel D. Marble	611 C	Quaker ⁴
Wilson College; Chambersburg, Pa. (1869)	Paul S. Havens	392 F	Presbyterian ⁴
Wilson Teachers College. See District of Columbia Teachers College.			
Winthrop College; Rock Hill, S. C. (1886)	Henry R. Sims	1,016 F	State

Institution, location and (date founded)	Chief executive ¹	Students ²	Control ³
Wisconsin, University of; Madison, Wis. (1848).....	Edwin B. Fred.....	17,774 C	State
Wisconsin, Univ. of (Milwaukee branch); Milwaukee, Wis. (1956) ³⁴	J. Martin Klotzsche ⁷	4,330 C	State
Wisconsin State College; Eau Claire, Wis. (1916).....	William R. Davies.....	1,267 C	State
Wisconsin State College; La Crosse, Wis. (1909).....	Rexford S. Mitchell.....	1,507 C	State
Wisconsin State College; Oshkosh, Wis. (1871).....	Forrest R. Polk.....	1,342 C	State
Wisconsin State College; Platteville, Wis. (1866).....	Chester O. Newlun.....	1,046 C	State
Wisconsin State College; River Falls, Wis. (1874).....	E. H. Kleinpell.....	1,032 C	State
Wisconsin State College; Stevens Point, Wis. (1894).....	William C. Hansen.....	1,266 C	State
Wisconsin State College; Superior, Wis. (1896).....	Jim D. Hill.....	1,042 C	State
Wisconsin State College; Whitewater, Wis. (1868).....	Robert C. Williams.....	1,174 C	State
Wittenberg College; Springfield, Ohio (1845).....	Claarence C. Stoughton.....	1,344 C	Lutheran
Wofford College; Spartanburg, S. C. (1854).....	Pendleton Gaines.....	690 M	Methodist
Woodstock College; Woodstock, Md. (1869).....	Rev. Joseph F. Murphy.....	218 M	Catholic
Wooster, College of; Wooster, Ohio (1866).....	Howard F. Lowry.....	1,102 C	Presbyterian
Worcester Polytechnic Institute; Worcester, Mass. (1865).....	Arthur B. Bronwell.....	980 M	Private
Wyoming, University of; Laramie, Wyo. (1887).....	G. D. Humphrey.....	2,968 C	State
Xavier University; Cincinnati, Ohio (1831).....	V. Rev. P. L. O'Connor.....	3,348 M ⁵	Catholic ⁴
Xavier University; New Orleans, La. (1925).....	Sister M. Josephina.....	1,062 C	Catholic ⁴
Yale University; New Haven, Conn. (1701).....	A. Whitney Griswold.....	7,664 M ⁵	Private
Yankton College; Yankton, S. Dak. (1881).....	Adrian Rondileau.....	355 C	Congregational ⁴
Yeshiva University; New York, N. Y. (1886).....	Samuel Belkin.....	3,032 Co	Jewish ⁴
Youngstown University; Youngstown, Ohio (1908).....	Howard W. Jones.....	4,996 C	Private

¹ President, unless otherwise indicated. ² M—Male; F—Female; C—Coeducational; Co—Co-ordinate. ³ Control, unless otherwise indicated. ⁴ Affiliated but not controlled. ⁵ Enrollment includes women who are admitted for special courses and/or graduate work. ⁶ Enrollment includes men who are admitted for special courses and/or graduate work. ⁷ Fall 1955. ⁸ Fall 1956. ⁹ Spring 1956. ¹⁰ Rector. ¹¹ Chancellor. ¹² Dean. ¹³ Managing Director. ¹⁴ Acting President. ¹⁵ Interim President. ¹⁶ Acting Chancellor. ¹⁷ Provost. ¹⁸ Director. ¹⁹ Acting Director. ²⁰ Acting Dean. ²¹ Superintendent. ²² Dean of the Faculty. ²³ Chairman, Administrative Committee. ²⁴ Includes New York State College of Ceramics, a contract unit of the State University of New York and an integral part of Alfred University. ²⁵ Barnard College is the women's undergraduate school of Columbia University. ²⁶ Jewish-sponsored; non-sectarian program. ²⁷ Pembroke College is the undergraduate school for women of Brown University. ²⁸ Duplicates deducted. ²⁹ Including Hastings College of the Law. ³⁰ Acting Provost. ³¹ Also campuses at San Dimas and Pomona. ³² Affiliated with Congregational, Baptist and Episcopal churches. ³³ Formerly Colorado A & M College. ³⁴ Formerly Wisconsin State College; made a division of the University of Wisconsin in 1956. ³⁵ Cornell University also operates the New York State Agricultural Experiment Station in Geneva, N. Y., and the Cornell Aeronautical Laboratory in Buffalo, N. Y. ³⁶ Rutgers College is for men only; Douglass College, formerly New Jersey State College for Women, is for women only; campuses at Newark and Camden are coeducational. ³⁷ Quasi-public in control. ³⁸ Fontbonne, Maryville and Webster Colleges are corporate colleges of St. Louis University. ³⁹ Hobart College is for men; William Smith College is for women. ⁴⁰ Legally public; administered and financed privately. ⁴¹ Formerly Polytechnic Institute of Puerto Rico. ⁴² Jackson College is Dept. of Women (Lib. Arts) for Tufts University. ⁴³ Teachers Institute and Seminary College are coeducational; Rabbinical School and Cantors Institute are male only. ⁴⁴ College is independent; theological seminary has Presbyterian affiliation. ⁴⁵ Co-educational in evening; men only during day. ⁴⁶ Mary Washington College is the constituent women's college of the University of Virginia. ⁴⁷ Professional schools located at Baltimore; Maryland State College located at Princess Anne. ⁴⁸ A division of the University of Maryland. ⁴⁹ Branch campus at Sault Ste. Marie, Mich. ⁵⁰ Formerly Michigan State College. ⁵¹ A branch of University of Minnesota at Minneapolis. ⁵² There are also campuses at St. Paul and Duluth. ⁵³ New Church (Swedenborgian). ⁵⁴ Female only at Park Ave. bldg.; coeducational at Bronx bldg. ⁵⁵ State support for teacher education. ⁵⁶ Will admit first students in September 1957. ⁵⁷ Newcomb College is constituent school for women of Tulane University. ⁵⁸ Year of consolidation. ⁵⁹ Maintained by individual Christian Scientists for sons and daughters of Christian Scientists. ⁶⁰ Affiliated with Harvard University. ⁶¹ Radford College is the women's division of Virginia Polytechnic Institute. ⁶² Affiliated with Methodist, Congregational and Presbyterian Churches. ⁶³ Formerly St. Paul's Polytechnic Institute. ⁶⁴ Snow College and College of Southern Utah are branches of Utah State Agricultural College. ⁶⁵ Until July 1, 1957. ⁶⁶ Includes Utica College, Utica, N. Y. ⁶⁷ Other campuses are located at El Paso, Galveston, Houston and Dallas. ⁶⁸ Does not include enrollment of Texas Western College at El Paso. See that entry. ⁶⁹ Part of University of Texas. ⁷⁰ President of Union College and Chancellor of Union University. ⁷¹ Control passing from City to State over 3-year period which began July 1, 1956. ⁷² Administrator. ⁷³ Formerly Oklahoma Agricultural and Mechanical College. ⁷⁴ Permanent site, now under construction, will be 7 mi. N of Colorado Springs. ⁷⁵ Total authorized strength is 2,496.

GEOGRAPHY

Miscellaneous Data

Source: U. S. Geological Survey.

Highest point: Mt. Whitney, Calif.*	14,495 ft.
Lowest point: Death Valley, Calif.*	282 ft. below sea level
Most northern point: Lake of the Woods projection, Minn.	49° 23' 04.5" N. lat.
Most southern point: Cape Sable, Fla.	25° 07' N. lat.
Most eastern point: West Quoddy Head, Maine	66° 57' W. long.
Most western point: Cape Alava, Wash.	124° 44' W. long.
Places farthest apart: Point Arena, Calif., to West Quoddy Head, Maine	2,897 mi.
Geographic center: near Lebanon, Smith County, Kans.	{ 39° 50' N. lat. 98° 35' W. long.
Northern boundary: Canada and Great Lakes	3,987 mi.
Southern boundary: Mexico	2,013 mi.

* The highest and lowest points in the U. S. are 86 mi. apart.

Mountain Peaks in the U. S. Over 14,000 Feet Above Sea Level

Source: U. S. Geological Survey.

Name of summit	State	Height, ft.	Name of summit	State	Height, ft.
Whitney	California	14,495	Sneffels	Colorado	14,150
Elbert	Colorado	14,431	San Luis	Colorado	14,146
Harvard	Colorado	14,420	Democrat	Colorado	14,142
Massive	Colorado	14,418	Capitol	Colorado	14,137
Rainier	Washington	14,410	Lindsey	Colorado	14,125
Williamson	California	14,384	Liberty Cap	Washington	14,112
La Plata	Colorado	14,340	Pikes Peak	Colorado	14,110
Blanca	Colorado	14,317	Kit Carson	Colorado	14,100
Uncompahgre	Colorado	14,301	Windom	Colorado	14,091
Crestone	Colorado	14,291	Eolus (Aeolus)	Colorado	14,086
Lincoln	Colorado	14,284	Snowmass	Colorado	14,077
Grays	Colorado	14,274	Columbia	Colorado	14,073
Antero	Colorado	14,269	Culebra	Colorado	14,069
Torreys	Colorado	14,264	Missouri	Colorado	14,067
Evans	Colorado	14,260	Sunlight	Colorado	14,060
Castle	Colorado	14,259	Split	California	14,058
Longs	Colorado	14,255	Red Cloud	Colorado	14,050
Quandary	Colorado	14,252	Handies	Colorado	14,049
Wilson	Colorado	14,246	Bierstadt	Colorado	14,046
White	California	14,246	Humboldt	Colorado	14,044
North Palisade	California	14,242	Langley	California	14,042
Cameron	Colorado	14,238	Middle Palisade	California	14,040
Shavano	Colorado	14,229	Little Bear	Colorado	14,040
Princeton	Colorado	14,197	Sherman	Colorado	14,037
Belford	Colorado	14,197	Stewart	Colorado	14,032
Yale	Colorado	14,196	Muir	California	14,025
Creston Needle	Colorado	14,191	Tyndall	California	14,025
Russell	California	14,190	Sunshine	Colorado	14,018
Bross	Colorado	14,169	Wetterhorn	Colorado	14,017
Sill	California	14,162	Wilson	Colorado	14,017
Shasta	California	14,162	Huron	Colorado	14,005
El Diente	Colorado	14,159	Barnard	California	14,003
Maroon	Colorado	14,158	Pyramid	Colorado	14,000
Tabeguache	Colorado	14,155	Grizzly	Colorado	14,000
Oxford	Colorado	14,153	North Maroon	Colorado	14,000
Point Success	Washington	14,150			

The Continental Divide

The Continental Divide is a ridge of high ground which runs irregularly north and south through the Rocky Mountains and separates eastward-flowing from westward-flowing streams. The waters which flow eastward empty into the Atlantic Ocean, chiefly by way of the Gulf of Mexico; those which flow westward empty into the Pacific.

Highest, Lowest, and Average Altitudes in the United States

Source: U. S. Geological Survey.

State	Average elevation; ft.	Highest point	Elevation, ft.	Lowest point	Elevation; ft.
Alabama	500	Cheaha Mountain	2,407	Gulf of Mexico	Sea level
Arizona	4,100	Humphreys Peak	12,670	Colorado River	100
Arkansas	650	Blue Mountain & Magazine Mountain	2,800	Ouachita River	55
California	2,900	Mount Whitney	14,495	Death Valley	282*
Colorado	6,800	Mount Elbert	14,431	Arkansas River	3,350
Connecticut	500	N. Bdy.-Mt. Frissell	2,380	Long Island Sound	Sea level
Delaware	60	Ebright Road	450	Atlantic Ocean	Sea level
D. C.	150	Tenleytown	420	Potomac River	Sea level
Florida	100	Sec. 30, T6N, R20W	345	Atlantic Ocean	Sea level
Georgia	600	Brasstown Bald	4,784	Atlantic Ocean	Sea level
Idaho	5,000	Borah Peak	12,662	Snake River	720
Illinois	600	Charles Mound	1,241	Mississippi River	279
Indiana	700	Greensfork Township	1,240	Ohio River	320
Iowa	1,100	In Osceola County	1,675	Mississippi River	480
Kansas	2,000	In T15S R43W	4,135	Verdigris River	700
Kentucky	750	Black Mountain	4,145	Mississippi River	257
Louisiana	100	Driskill Mountain	535	New Orleans	5*
Maine	600	Mount Katahdin	5,268	Atlantic Ocean	Sea level
Maryland	350	Backbone Mountain	3,360	Atlantic Ocean	Sea level
Massachusetts	500	Mount Greylock	3,491	Atlantic Ocean	Sea level
Michigan	900	In Baraga County	1,980	Lake Erie	572
Minnesota	1,200	Misquah Hills	2,230	Lake Superior	602
Mississippi	300	Woodall Mountain	806	Gulf of Mexico	Sea level
Missouri	800	Taum Sauk Mountain	1,772	St. Francis River	230
Montana	3,400	Granite Peak	12,799	Kootenai River	1,800
Nebraska	2,600	Johnson Township	5,424	Southeast corner of State	840
Nevada	5,500	Boundary Peak, White Mountains	13,145	Colorado River	470
New Hampshire	1,000	Mount Washington	6,288	Atlantic Ocean	Sea level
New Jersey	250	High Point	1,801	Atlantic Ocean	Sea level
New Mexico	5,700	Wheeler Peak	13,160	Red Bluff Reservoir	2,817
New York	1,000	Mount Marcy	5,344	Atlantic Ocean	Sea level
North Carolina	700	Mount Mitchell	6,684	Atlantic Ocean	Sea level
North Dakota	1,900	Black Butte	3,468	Red River	750
Ohio	850	Campbell Hill	1,550	Ohio River	433
Oklahoma	1,300	Black Mesa	4,978	Red River	300
Oregon	3,300	Mount Hood	11,245	Pacific Ocean	Sea level
Pennsylvania	500	Mt. Davis, Negro Mountains	3,213	Delaware River	Sea level
Rhode Island	200	Jerimoth Hill	812	Atlantic Ocean	Sea level
South Carolina	350	Sassafras Mountain	3,560	Atlantic Ocean	Sea level
South Dakota	2,200	Harney Peak	7,242	Big Stone Lake	962
Tennessee	900	Clingmans Dome	6,642	Mississippi River	182
Texas	1,700	Guadalupe Peak	8,751	Gulf of Mexico	Sea level
Utah	6,100	Kings Peak	13,498	Beaverdam Creek	2,000
Vermont	1,000	Mount Mansfield	4,393	Lake Champlain	95
Virginia	950	Mount Rogers	5,720	Atlantic Ocean	Sea level
Washington	1,700	Mount Rainier	14,410	Pacific Ocean	Sea level
West Virginia	1,500	Spruce Knob	4,860	Potomac River	240
Wisconsin	1,050	Sugarbush Hill	1,951	Lake Michigan	581
Wyoming	6,700	Gannett Peak	13,785	Belle Fourche River	3,100

* Below sea level.

Forest Resources of the United States

Source: U. S. Forest Service.

Nearly 1/3 of the U. S. is forest land including over 800 different kinds of trees. Commercial areas include land capable of producing timber of commercial quantity and quality, and available now or prospectively for such use. Almost all the old-growth forest is in the West. Noncommercial areas include alpine, semidesert, chaparral and other forest types of low timber productivity, though much of it is important for watershed protection.

U. S. Forest Land in Acres, 1953

Old growth	46,055,000
Young growth saw timber	132,561,000
Pole timber stands	169,408,000
Seedling and sapling stands	94,709,000
Nonstocked and other areas	41,607,000
Total, commercial forest land	484,340,000
Noncommercial forest	163,346,000
Total, all forest land	647,686,000

Rivers of the U. S.

Source: U. S. Geological Survey.

(300 or more miles long)

ALABAMA (315 mi.): From junction of Tallapoosa R. and Coosa R. in Alabama to junction with Tombigbee R. to form Mobile R. and Tensaw R.

ALLEGHENY (325 mi.): From Potter Co. in Pennsylvania to junction with Monongahela R. at Pittsburgh to form Ohio R.

ALTAMAHA-OCMULGEE (392 mi.): From junction of Yellow R. and South R., Newton Co. in Ga. to Atlantic Ocean.

APALACHICOLA-CHATTAHOOCHEE (500 mi.): From Towns Co. in Ga. to Gulf of Mexico in Fla.

ARKANSAS (1,450 mi.): From Lake Co. in Colorado to Mississippi R. in Arkansas.

BIG BLACK (330 mi.): From Webster Co. in Mississippi to Mississippi R.

BIG HORN (336 mi.): From junction of Popo Agie R. and Wind R. in Wyoming to Yellowstone R. in Montana.

BRAZOS (870 mi.): From junction of Salt Fork and Double Mountain Fork in Texas to Gulf of Mexico.

CANADIAN (906 mi.): From Colfax Co. in New Mexico to Arkansas R. in Oklahoma.

CEDAR (329 mi.): From south central Minnesota to Iowa R. in Iowa.

CIMARRON (600 mi.): From Colfax Co. in New Mexico to Arkansas R. in Okla.

CLARK FORK-PEND OREILLE (505 mi.): From Silver Bow Co. in Mont. to Columbia R. in B. C.

COLORADO (1,440 mi.): From Grand Co. in Colorado to Gulf of California in Mexico.

COLORADO (840 mi.): From Dawson Co. in Texas to Matagorda Bay.

COLUMBIA (1,214 mi.): From Columbia Lake in British Columbia to Pacific Ocean between Oregon and Washington.

CONNECTICUT (407 mi.): From Connecticut Lakes in New Hampshire to Long Island Sound in Connecticut.

CUMBERLAND (687 mi.): From junction of forks in Harlan Co. in Kentucky to Ohio R.

DAKOTA (Sometimes called **JAMES**) (710 mi.): From Wells Co. in North Dakota to Missouri R. in South Dakota.

DES MOINES (327 mi.): From junction of forks in Humboldt Co. in Iowa to Mississippi R.

GILA (630 mi.): From southwest New Mexico to Colorado R. in Arizona.

GREEN (360 mi.): From Lincoln Co. in Kentucky to Ohio R. in Indiana.

GREEN (730 mi.): From Sublette Co. in Wyoming to Colorado R. in Utah.

HUDSON (306 mi.): From Essex Co. in New York to Upper New York Bay between New York and New Jersey.

JAMES (340 mi.): From junction of Jackson R. and Cowpasture R. in Virginia to Chesapeake Bay.

LITTLE COLORADO (300 mi.): From Apache Co. in Arizona to Colorado R.

LITTLE MISSOURI (560 mi.): From northeast Wyoming to Missouri R. in North Dakota.

MILK (625 mi.): From Glacier Co. in Montana to Missouri R.

MINNESOTA (332 mi.): From Big Stone Lake between Minnesota and South Dakota to Mississippi R. at St. Paul.

MISSISSIPPI (2,470 mi.): From Lake Itasca in Minn. to Gulf of Mexico in La.

MISSOURI (2,466 mi.): From junction of Jefferson R., Madison R., and Gallatin R. in Montana to Mississippi R. near St. Louis.

NEOSHO (460 mi.): From Morris Co. in Kansas to Arkansas R. in Oklahoma.

NIORARA (431 mi.): From Niobrara Co. in Wyoming to Missouri R. in Nebraska.

NORTH CANADIAN (760 mi.): From Union Co. in New Mexico to Canadian R. in Oklahoma.

NORTH PLATTE (618 mi.): From Jackson Co. in Colorado to junction with So. Platte R. in Nebraska to form Platte R.

NUCES (338 mi.): From near Edwards-Real Co. border in Texas to Nueces Bay.

OHIO (981 mi.): From junction of Allegheny R. and Monongahela R. at Pittsburgh to Mississippi R. between Illinois and Kentucky.

OSAGE (500 mi.): From junction of Elm Creek and Onion Creek in Kansas to Missouri R. in Missouri.

OUACHITA (605 mi.): From Polk Co. in Arkansas to Red R. in Louisiana.

PEARL (490 mi.): From Neshoba Co. in Mississippi to Gulf of Mexico between Mississippi and Louisiana.

PECOS (735 mi.): From Mora Co. in New Mexico to Rio Grande in Texas.

PEE DEE-YADKIN (435 mi.): From Watauga Co. in N. C. to Winyah Bay in S. C.

PLATTE (310 mi.): From junction of North Platte R. and South Platte R. in Nebraska to Missouri below Omaha.

POWDER (375 mi.): From junction of forks in Johnson Co. in Wyoming to Yellowstone R. in Montana.

RED (1,018 mi.): From junction of forks in Tillman Co. in Oklahoma to Mississippi R. in Louisiana.

RED (Sometimes called **RED RIVER OF THE NORTH**) (545 mi.): From junction of Otter Tail R. and Bois de Sioux R. in Minnesota to Lake Winnipeg in Manitoba.

REPUBLICAN (445 mi.): From eastern Colorado to junction with Smoky Hill R. in Kansas to form Kansas R.

RIO GRANDE (1,885 mi.): From San Juan Co. in Colorado to Gulf of Mexico between Texas and Mexico.

ROANOKE (380 mi.): From junction of forks in Montgomery Co. in Virginia to Albemarle Sound in North Carolina.

ROCK (300 mi.): From Washington Co. in Wisconsin to Mississippi R. in Illinois.

SABINE (380 mi.): From junction of forks in Hunt Co. in Texas to Sabine Lake between Texas and Louisiana.

SACRAMENTO (382 mi.): From Siskiyou Co. in California to Suisun Bay.

SAINT FRANCIS (425 mi.): From Iron Co. in Missouri to Mississippi R. in Arkansas.

SALMON (420 mi.): From Custer Co. in Idaho to Snake R.

SAN JOAQUIN (350 mi.): From junction of forks in Madera Co. in California to Suisun Bay.

SAN JUAN (360 mi.): From Archuleta Co. in Colorado to Colorado R. in Utah.

SANTEE-WATEREE-CATAWBA (538 mi.): From McDowell Co. in N. C. to Atlantic Ocean in S. C.

SAVANNAH (314 mi.): From junction of Tugaloo R. and Seneca R. in South Carolina to Atlantic Ocean between Georgia and South Carolina.

SMOKY HILL (540 mi.): From Cheyenne Co. in Colorado to junction with Republican R. in Kansas to form Kansas R.

SNAKE (1,038 mi.): From Yellowstone National Park in Wyoming to Columbia R. in Washington.

SOUTH PLATTE (424 mi.): From Park Co. in Colorado to junction with North Platte R. in Nebraska to form Platte R.

SUSQUEHANNA (444 mi.): From Otsego Co. in New York to Chesapeake Bay in Maryland.

TALLAHATCHIE (301 mi.): From Tippah Co. in Mississippi to junction with Yazoo R. to form Yazoo R.

TENNESSEE (652 mi.): From junction of Holston R. and French Broad R. near Knoxville to Ohio R. in Kentucky.

TOMBIGBEE (409 mi.): From junction of forks near Amory, Mississippi, to junction with Alabama R. in Alabama to form Mobile R. and Tensaw R.

TRINITY (360): From junction of forks in Kaufman Co. in Texas to Galveston Bay.

WABASH (475 mi.): From Darke Co. in Ohio to Ohio R. between Illinois and Indiana.

WASHITA (500 mi.): From Hemphill Co. in Texas to Red R. in Oklahoma.

WHITE (690 mi.): From Madison Co. in Arkansas to Mississippi R.

WISCONSIN (430 mi.): From Vilas Co. in Wisconsin to Mississippi R.

YELLOWSTONE (671 mi.): From Park Co. in Wyoming to Missouri R. in North Dakota.

Coastline of the United States

Source: U. S. Coast and Geodetic Survey.

State	Lengths in statute miles		
	General coastline*	Tidal shoreline, general†	Tidal shoreline, detailed‡
Maine.....	228	676	3,478
New Hampshire.....	13	14	131
Massachusetts.....	192	453	1,519
Rhode Island.....	40	156	384
Connecticut.....	...	96	618
New York.....	127	470	1,850
New Jersey.....	130	398	1,792
Pennsylvania.....	...	...	89
Delaware.....	28	79	381
Maryland.....	31	452	3,190
Virginia.....	112	567	3,315
North Carolina.....	301	1,030	3,375
South Carolina.....	187	758	2,876
Georgia.....	100	603	2,344
Florida (Atlantic).....	399	618	3,035
Total Atlantic coast.....	1,888	6,370	28,377
Florida (Gulf).....	798	1,658	5,391
Alabama.....	53	199	607
Mississippi.....	44	155	359
Louisiana.....	397	985	7,721
Texas.....	367	1,100	3,359
Total Gulf coast.....	1,659	4,097	17,437
California.....	840	1,190	3,427
Oregon.....	296	312	1,410
Washington.....	157	908	3,026
Total Pacific coast.....	1,293	2,410	7,863
Total U. S.....	4,840	12,877	53,677

* Figures are lengths of general outline of seacoast. Measurements made with unit measure of 30 minutes of latitude on charts as near scale of 1:1,200,000 as possible. Shoreline of bays and sounds is included to point where they narrow to width of unit measure, and distance across at such point is included. † Measurements made with unit measure of 3 statute miles on charts of 1:200,000 and 1:400,000 scale when available. Shoreline of bays, sounds and other bodies of water included to point where they narrow to width of 3 statute miles, and distance across at such point is included. ‡ Figures obtained in 1939-40 with recording measure on largest scale maps and charts then available. Shoreline of bays, sounds and other bodies of water included to head of tide-water, or to point where they narrow to width of 100 feet.

U. S. Water Area*

Source: U. S. Bureau of the Census.

	Sq. mi.
Atlantic Ocean.....	2,298
Chesapeake Bay.....	3,237
Delaware Bay.....	665
Erie, Lake.....	5,002
Georgia and Juan de Fuca, Straits of.....	1,610
Huron, Lake.....	8,975
Long Island Sound.....	1,299
Mexico, Gulf of.....	3,837
Michigan, Lake.....	22,178
New York Harbor.....	92
Ontario, Lake.....	3,033
Pacific Ocean.....	343
Puget Sound.....	561
St. Clair, Lake.....	116
Superior, Lake.....	21,118
Total.....	74,364

* Other than inland water.

WEATHER AND CLIMATE

Devastating North Atlantic Hurricanes of the 20th Century

The following is a selected list of North Atlantic hurricanes based on casualties, damage and general public interest. Facts about each storm are taken from Weather Bureau records, although in some cases only estimates of wind speed are available. Data given in this list pertain only to U. S. land areas except where indicated otherwise.

Date	Areas hardest hit	Land stations with highest wind speed	Deaths (U. S. only)	Est. damage (millions)	Remarks
1900, Sept. 8.....	Galveston, Tex.	Galveston, Tex. (120* mph)	6,000	\$ 20	Damage due to both winds and storm wave. Galveston Is. inundated.
1909, Sept. 10-12....	La.; Miss.	New Orleans, La. (68 mph)	350	5	Winds 50-75 mi. W of New Orleans, where deaths occurred, were much stronger than 68 mph.
1915, Aug. 5-24.....	East Tex.; La.	Galveston, Tex. (120 mph)	275	50	Water 5-6 ft. deep in Galveston business district. 90% of homes demolished. Warnings issued well ahead of time.
1915, Sept. 22-Oct. 2..	Mid-Gulf Coast	Burrwood, La. (140 mph)	275	13	Many casualties due to persons insisting on staying in low-lying areas despite warnings.
1919, Sept. 2-14.....	Fla.; La.; Tex.	Sand Key, Fla. (84† mph)	284	22	488 persons drowned at sea.
1926, Sept. 6-22.....	Fla.; Ala.	Miami Beach, Fla. (132 mph)	100	105	Most deaths were in Miami area. Said to have been one of most destructive storms of century.
1928, Sept. 6-20.....	Southern Fla.	Lake Okeechobee, Fla. (75† mph)	1,836	25	1,870 injured. Nearly all deaths were in Lake Okeechobee area. Winds estimated as high as 160 mph caused Lake to overflow into populated areas.
1935, Aug. 31-Sept. 8..	Southern Fla.	Tampa, Fla. (75 mph)	376	6	Sustained winds over Florida Keys est. 150-200 mph. Remembered as "Labor Day Storm," one of most violent on record.
1935, Oct. 30-Nov. 8...	Southern Fla.	Miami, Fla. (75 mph)	5	6	Called "The Yankee Storm" because it moved in from N. E. It was of small diameter and its wind covered only narrow band.
1938, Sept. 16-22....	Long Island, N. Y. Southern New Eng.	Blue Hills Obs., Mass. (186 mph)	600	250	Unusually destructive. Storm center moved as fast as 56 mph at times. 1,754 injured. Damage est. as high as \$330 million.
1940, Aug. 5-15.....	Ga.; S. C.; N. C.	Savannah, Ga. (73 mph)	50	3	30 of deaths were due to disastrous flooding inland as far west as Tennessee.
1944, Sept. 8-16.....	N. C. to New England	Cape Henry, Va. (134 mph)	46	100	344 deaths at sea. Shipping lanes were crowded with war-time activity.
1944, Oct. 13-21.....	Fla. to Carolinas	Dry Tortugas Is. (120 mph)	18	100	About 300 were killed in Cuba area before storm reached U. S. Evacuation of thousands from threatened areas in Fla. prevented higher toll.
1945, Aug. 24-29.....	Texas	Seadrift, Tex. (135 mph)	3	20	Several other coastal localities recorded 135 mph. One of most intense hurricanes in Texas.
1945, Sept. 11-19.....	Fla.; Ga.; S. C.	Carysfort Reef Light, Fla. (138 mph)	4	60	22 casualties in Bahamas. Damage mostly in Dade Co., Fla. Evacuation of 50,000 persons prevented heavier loss of life.

Date	Areas hardest hit	Land stations with highest wind speed	Deaths (U. S. only)	Est. damage (millions)	Remarks
1947, Sept. 10-19.....	Fla.; Mid-Gulf Coast	Hillsboro Light, Fla. (155 mph)	51	110	Damage especially heavy along Gulf Coast. Onshore winds resulted in high water.
1949, Aug. 23-29.....	Fla. to Carolinas	Jupiter, Fla. (153 mph)	2	52	Center of storm crossed Lake Okeechobee. Levees held back water, which rose 12 ft. (Compare casualties with 1928.)
1950, Oct. 15-19.....	Florida	Miami, Fla. (122 mph)	4	28	"KING"—small but violent storm. Struck Miami, then moved up Florida peninsula.
1954, Aug. 26-31.....	N. C. to Maine	Block Island, R. I. (135 mph)	60	461	"CAROL"—more damage than any other single storm on record for U. S. Water and high waves flooded low-lying areas 1,000 injuries in Long Island-New England area.
1954, Sept. 6-11.....	N. J. to Maine	Blue Hill Obs., Mass. (101 mph)	21	43	"EDNA"—wind est. up to 135 mph at Massachusetts Bay.
1954, Oct. 5-16.....	S. C. to N. Y.	(See Remarks)	95	252	"HAZEL"—several N. C. localities had winds of 130-150 mph with unusually heavy wave damage resulting. Est. 400-1,000 casualties in Haiti. In Canada there were 78 deaths, mostly due to flooding.
1955, Aug. 11-13.....	N. C. to Pa. and N. Y.	Ft. Macon, N. C. (100 mph)	25	46	"CONNIE"—center passed over Morehead City and Beaufort flooding these cities. 12.35 in. of rain in New York City.
1955, Aug. 17-19.....	N. C. to New England	Wilmington, N. C. (74 mph)	184	832	"DIANE"—worst floods in history in Southern New England. 16 in. of rain in Hartford area.
1955, Sept. 19-20.....	North Carolina	Beaufort, N. C. (120* mph)	7	88	"IONE"—center passed over Morehead City and Beaufort but lost force rapidly thereafter. Recurved to sea south of Norfolk.
1956, Sept. 24-26.....	Northwest Florida	Burrwood, La. (84 mph)	15	25	"FLOSSY"—center passed in northeasterly direction over Burrwood, La., at 4 a.m. and over Pensacola, Fla., at 3 p.m. on Sept. 24. Lost force rapidly thereafter, but dumped heavy rains in southeastern states.
1957, June 26-28.....	Southwest Texas and Southwest Louisiana	Lake Charles, La. (97 mph)	353	150	"AUDREY"—gave an early start to the hurricane season and wiped out Cameron, La. Two weeks later "BERTHA," a less destructive tropical storm, struck in exactly the same area.

* Estimated. † Wind measuring equipment disabled at speed indicated.

Tropical Storms and Hurricanes, 1887-1956

	Jan.-Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
No. of tropical storms.....	3	10	31	38	126	185	130	29	3	555
No. of tropical storms which reached hurricane intensity.....	2	2	14	20	94	115	63	11	1	322

NOTE: Storms are listed under the month in which they were first observed. Exception: "ALICE," 1955 (Dec. 30, 1954-Jan. 5, 1955) is carried as a Jan. storm.

Groups of Tornadoes That Caused Outstanding Damage

Source: Data for 1884-1953, except Sept. 1, 1952, reprinted from *Tornadoes of the United States* by S. D. Flora. Copyright 1954, by University of Oklahoma Press. Used by permission.

Date	Tornadoes in group	Deaths	Property losses	States in which storms occurred
1884, Feb. 19.....	50	200	*	Mississippi, Alabama, North and South Carolina, Tennessee, Kentucky, Indiana
1917, May 26-27.....	*	249	\$ 5,555,000	Illinois, Indiana, Arkansas, Kentucky, Tennessee, Alabama, Mississippi
1920, Apr. 20.....	6	220	3,525,000	Mississippi, Alabama, Tennessee
1924, Apr. 29-30.....	22	115	4,372,300	Oklahoma, Arkansas, Alabama, Georgia, Louisiana, North and South Carolina, Virginia
1924, June 28.....	4	96	13,050,000	Ohio and Pennsylvania
1925, Mar. 18.....	8	792	17,872,000	Missouri, Illinois, Indiana, Kentucky, Tennessee, Alabama
1927, May 8-9.....	36	227	7,877,000	Texas, Louisiana, Missouri, Nebraska, Indiana, Michigan
1932, Mar. 21.....	27	321	5,514,000	Alabama, Mississippi, Georgia, Tennessee
1936, Apr. 5-6.....	22	498	21,800,000	Arkansas, Alabama, Tennessee, Georgia, South Carolina
1944, June 23.....	4	153	5,160,000	Pennsylvania, West Virginia, Maryland
1947, Apr. 9-10.....	8	167	10,030,750	Texas, Oklahoma, Kansas
1952, Mar. 21-22.....	31	343	15,327,100	Arkansas, Tennessee, Missouri, Mississippi, Alabama, Kentucky
1952, Sept. 1.....			38 B-36's	Texas (Fort Worth)
1953, June 7-9.....	12	234	93,230,840	Michigan, Ohio, and New England states.
1954, Mar. 13.....	4	8	9,000,000	Georgia. Heavy damage at Lawson Air Base and Ft. Benning.
1955, May 25.....	13	102	11,747,500	Oklahoma and Kansas. Completely destroyed Udall, Kans., and part of Blackwell, Okla.
1956, Apr. 2-3.....	(†)	39	17,000,000	Oklahoma, Kansas, Tennessee, Michigan, Wisconsin
1956, Apr. 15.....	(†)	25	1,500,000	Alabama
1956, May 12.....	(†)	3	4,000,000	Michigan
1957, Apr. 2.....	(†)	17	2,000,000	Texas and Oklahoma
1957, May 15.....	(†)	21	500,000	Texas
1957, May 20-21.....	(†)	48	15,000,000	Missouri

* Not definitely known; believed to be large. † No information available.

Additional storms and hurricanes that have occurred in late 1957 may be listed in *News Record of 1957*.

CLIMATE OF SELECTED U. S. CITIES

Source: U. S. Weather Bureau.

Asterisk (*) indicates less than one-half; T—indicates trace; TH—indicates trace of hail; n.a.—indicates not available.

Month	Temperature				Precipitation			Percentage possible sunshine	Percentage relative humidity at noon
	Average maximum	Average minimum	Absolute maximum	Absolute minimum	Amount	Snowfall, inches	Days with precipitation		
BAKERSFIELD, CALIFORNIA (KERN COUNTY AIRPORT) Lat 35° 25' N, Long 119° 03' W									
January.....	57	37	82	14	1.02	T	6	n.a.	70
April.....	76	50	100	30	0.75	T	4	n.a.	46
July.....	101	67	118	46	0.01	0.0	*	n.a.	29
October.....	81	52	104	31	0.37	0.0	2	n.a.	40
Annual.....	79	51	118	13	6.36	0.1	34	n.a.	47
CARIBOU, MAINE (MUNICIPAL AIRPORT) Lat 46° 52' N, Long 68° 01' W									
January.....	18	-1	51	-32	2.24	21.5	14	n.a.	70
April.....	43	26	80	2	2.63	6.4	13	n.a.	59
July.....	75	54	95	40	4.03	0.0	13	n.a.	59
October.....	51	33	79	14	3.47	1.1	11	n.a.	60
Annual.....	47	28	96	-41	35.94	101.9	154	n.a.	62
CHICAGO, ILLINOIS (MIDWAY AIRPORT) Lat 41° 47' N, Long 87° 45' W									
January.....	33	17	67	-20	1.84	8.6	11	44	70
April.....	58	39	91	17	2.82	1.0	11	57	58
July.....	85	64	105	49	2.73	0.0	9	73	55
October.....	64	44	91	14	2.56	0.1	9	61	56
Annual.....	59	41	105	-23	32.72	33.8	124	59	61

Month	Temperature				Precipitation			Percentage possible sunshine	Percentage relative humidity at noon
	Average maximum	Average minimum	Absolute maximum	Absolute minimum	Amount	Snowfall, inches	Days with precipitation		
DALLAS, TEXAS (LOVE FIELD) Lat 32° 51' N, Long 96° 51' W									
January.....	55	36	88	−3	2.47	1.2	8	51	62
April.....	77	56	96	30	3.87	T	8	63	53
July.....	95	76	111	56	1.97	0.0	5	79	49
October.....	80	58	100	26	2.67	0.0	6	69	50
Annual.....	77	56	111	−3	34.42	2.4	81	67	53

DENVER, COLORADO (STAPLETON AIRFIELD) Lat 39° 46' N, Long 104° 53' W

January.....	42	16	76	-29	0.50	6.0	5	67	42
April.....	61	34	86	4	2.05	9.5	9	63	38
July.....	87	58	102	42	1.36	TH	9	69	30
October.....	66	37	90	-2	1.01	4.0	6	71	33
Annual.....	64	36	105	-29	14.20	56.1	86	67	37

DULUTH, MINNESOTA (CITY OFFICE) Lat 46° 47' N, Long 92° 06' W

January.....	19	2	55	-41	1.01	11.1	10	46	74
April.....	47	30	88	-5	2.21	4.9	9	58	60
July.....	76	56	106	41	3.31	0.0	11	67	61
October.....	54	37	85	8	1.96	1.2	10	48	61
Annual.....	48	30	106	-41	26.63	56.0	126	55	66

GREAT FALLS, MONTANA (MUNICIPAL AIRPORT) Lat 47° 29' N, Long 111° 21' W

January.....	32	14	62	-33	0.55	7.5	7	49	63
April.....	56	33	87	-6	0.95	4.0	8	62	45
July.....	84	55	102	42	1.35	TH	7	80	37
October.....	59	37	91	7	0.72	2.1	6	61	47
Annual.....	56	34	105	-35	14.06	52.8	96	63	51

KANSAS CITY, MISSOURI (MUNICIPAL AIRPORT) Lat 39° 07' N, Long 94° 35' W

January.....	39	21	75	-20	1.43	4.6	7	55	64
April.....	66	46	95	16	3.61	0.8	11	60	53
July.....	91	71	112	53	2.83	0.0	9	77	49
October.....	70	49	98	17	2.93	0.2	7	67	51
Annual.....	66	46	113	-22	35.31	20.5	104	65	55

LOS ANGELES, CALIFORNIA (CITY OFFICE) Lat 34° 03' N, Long 118° 14' W

January.....	65	45	90	28	2.38	T	6	70	45
April.....	71	52	100	36	1.17	0.0	4	68	52
July.....	83	62	109	49	T	0.0	*	78	52
October.....	77	56	104	40	0.50	0.0	2	76	47
Annual.....	74	54	110	28	14.54	T	39	73	49

MIAMI, FLORIDA (CITY OFFICE) Lat 25° 47' N, Long 80° 11' W

January.....	74	63	83	31	2.15	0.0	8	66	59
April.....	80	69	91	44	3.44	0.0	7	73	55
July.....	87	76	95	65	4.36	0.0	15	65	64
October.....	83	73	91	52	7.88	0.0	15	62	63
Annual.....	81	70	95	27	47.26	0.0	130	66	60

MIAMI BEACH, FLORIDA Lat 25° 47' N, Long 80° 08' W

January.....	76	64	84	35	2.04	0.0	7	n.a.	n.a.
April.....	81	70	90	48	2.61	0.0	7	n.a.	n.a.
July.....	88	77	98	69	3.83	0.0	15	n.a.	n.a.
October.....	84	74	92	56	7.07	0.0	15	n.a.	n.a.
Annual.....	82	71	98	35	42.97	0.0	124	n.a.	n.a.

Month	Temperature				Precipitation			Percentage possible sunshine	Percentage relative humidity at noon
	Average maximum	Average minimum	Absolute maximum	Absolute minimum	Amount	Snowfall, inches	Days with precipitation		
NASHVILLE, TENNESSEE (BERRY FIELD) Lat 36° 07' N, Long 86° 41' W									
January.....	49	31	78	—10	4.93	2.7	12	42	66
April.....	71	49	90	25	3.69	0.1	11	60	51
July.....	91	69	107	51	3.96	0.0	10	69	53
October.....	74	50	94	26	2.52	T	7	65	51
Annual.....	71	50	107	—13	45.19	8.4	120	59	56

NEW ORLEANS, LOUISIANA (CITY OFFICE) Lat 29° 57' N, Long 90° 04' W

January.....	64	48	83	15	4.78	0.1	10	49	67
April.....	78	62	91	38	5.45	0.0	7	63	59
July.....	90	76	102	66	7.09	0.0	15	58	64
October.....	80	65	94	40	3.66	0.0	6	70	58
Annual.....	78	63	102	7	63.54	0.2	119	59	62

NEW YORK, N. Y. (BATTERY PLACE) Lat 40° 42' N, Long 74° 01' W

January.....	40	26	71	-6	3.46	7.4	12	51	61
April.....	58	42	91	12	3.22	1.0	11	60	54
July.....	82	67	102	54	4.24	0.0	11	65	58
October.....	65	50	90	27	3.04	T	9	63	58
Annual.....	61	46	102	-14	42.03	30.1	125	60	58

PHOENIX, ARIZONA (SKY HARBOR AIRPORT) Lat 33° 26' N, Long 112° 01' W

January.....	65	35	85	16	0.60	T	4	76	40
April.....	84	50	104	32	0.35	T	2	88	24
July.....	105	75	118	61	0.70	0.0	5	83	30
October.....	88	54	105	36	0.40	0.0	2	88	28
Annual.....	86	53	118	16	7.16	T	36	85	31

SALT LAKE CITY, UTAH (MUNICIPAL AIRPORT) Lat 40° 46' N, Long 111° 58' W

January.....	36	17	60	-22	1.20	13.7	10	46	71
April.....	63	37	85	14	1.76	2.9	9	68	42
July.....	92	61	106	41	0.61	0.0	5	82	27
October.....	67	39	87	18	1.34	0.6	7	72	42
Annual.....	64	39	106	-30	14.79	51.9	88	68	46

SAN FRANCISCO, CALIFORNIA (CITY OFFICE) Lat 37° 47' N, Long 122° 25' W

January.....	55	45	78	29	4.03	T	11	53	69
April.....	62	49	89	40	1.49	TH	6	70	62
July.....	64	53	99	47	0.01	0.0	1	68	71
October.....	68	54	96	43	1.07	TH	4	70	60
Annual.....	63	51	101	27	20.51	0.2	69	66	66

SEATTLE, WASHINGTON (CITY OFFICE) Lat 47° 36' N, Long 122° 20' W

January.....	45	36	67	3	4.49	5.0	18	25	81
April.....	59	44	87	30	1.94	0.0	13	50	64
July.....	75	56	100	46	0.52	0.0	5	64	63
October.....	61	48	82	29	3.08	T	13	35	80
Annual.....	60	46	100	3	31.92	11.2	152	46	72

WASHINGTON, D. C. (CITY OFFICE) Lat 38° 54' N, Long 77° 03' W

January.....	44	29	80	-14	3.41	6.0	11	46	56
April.....	65	45	95	15	3.20	0.4	11	57	45
July.....	87	68	106	52	4.11	0.0	11	64	52
October.....	68	49	96	26	2.97	0.1	8	61	50
Annual.....	66	48	106	-15	41.52	19.4	124	58	51

English Language Daily and Sunday U. S. Newspapers

(as of Sept. 30, 1956)

Source: Editor & Publisher.

State	Morning papers & circulation		Evening papers & circulation		Total M & E & circulation		Sunday papers & circulation	
Alabama.....	4	199,817	15	435,603	19	635,420	13	540,364
Arizona.....	4	132,589	9	125,068	13	257,657	5	199,772
Arkansas.....	7	149,882	28	211,577	35	361,459	8	284,413
California.....	17	1,632,324	106	2,765,376	123	4,397,700	23	3,414,494
Colorado.....	3	194,520	22	400,087	25	594,607	9	624,519
Connecticut.....	5	197,761	19	539,358	25	737,119	6	466,719
Delaware.....	1	29,562	2	81,900	3	111,462	0	.....
District of Columbia.....	1	385,517	2	428,600	3	814,117	2	704,463
Florida.....	14	786,278	30	552,598	44	1,338,876	29	1,187,112
Georgia.....	6	373,651	24	501,417	30	875,068	10	788,802
Idaho.....	4	63,801	11	71,738	14	135,539	4	87,059
Illinois.....	10	1,551,859	78	2,408,218	87	3,960,077	18	3,187,578
Indiana.....	10	438,892	77	1,150,859	87	1,589,751	18	1,019,925
Iowa.....	4	302,957	40	624,562	44	927,519	8	799,761
Kansas.....	4	199,027	50	506,034	53	705,061	15	498,685
Kentucky.....	7	306,740	23	402,591	29	709,331	13	518,903
Louisiana.....	4	320,740	15	411,126	19	731,866	10	632,971
Maine.....	5	183,231	4	57,438	9	240,669	1	94,634
Maryland.....	4	223,468	11	528,785	12	752,253	3	682,112
Massachusetts.....	6	830,266	45	1,526,074	51	2,356,340	10	1,516,367
Michigan.....	2	507,597	53	1,838,356	55	2,345,953	12	2,029,955
Minnesota.....	4	358,117	26	657,683	20	1,015,800	5	908,576
Mississippi.....	5	70,445	16	196,434	21	266,879	10	172,595
Missouri.....	9	758,070	49	1,067,171	57	1,825,241	13	1,405,069
Montana.....	4	91,947	14	75,679	18	167,626	10	149,633
Nebraska.....	3	167,275	17	292,150	20	459,425	6	346,635
Nevada.....	2	25,925	6	47,532	8	73,457	3	57,237
New Hampshire.....	1	23,258	9	93,039	9	116,297	1	36,172
New Jersey.....	5	387,247	20	962,957	25	1,350,204	8	834,838
New Mexico.....	2	44,376	17	117,313	19	161,689	13	127,548
New York.....	24	4,928,601	71	3,825,292	95	8,753,893	19	9,535,414
North Carolina.....	9	505,920	38	514,975	47	1,020,895	16	671,208
North Dakota.....	3	36,607	8	114,138	11	159,745	2	82,393
Ohio.....	8	799,222	89	2,607,628	97	3,406,850	17	2,087,534
Oklahoma.....	8	298,065	44	413,417	52	711,482	40	650,132
Oregon.....	4	261,401	18	346,169	22	607,570	8	591,919
Pennsylvania.....	27	1,375,115	100	2,743,382	126	4,118,497	14	3,318,972
Rhode Island.....	1	55,720	6	240,542	7	296,262	2	192,912
South Carolina.....	8	317,335	10	136,640	18	453,975	7	339,651
South Dakota.....	1	2,825	11	155,463	12	158,288	4	109,366
Tennessee.....	7	480,912	22	526,754	29	1,007,666	12	823,221
Texas.....	22	1,141,195	89	1,615,726	111	2,756,921	76	2,533,842
Utah.....	1	97,938	11	135,791	5	233,729	4	227,745
Vermont.....	2	49,346	11	43,271	10	92,617	1	12,130
Virginia.....	10	381,014	23	438,833	33	819,847	13	571,125
Washington.....	6	321,180	21	597,187	27	918,367	10	829,208
West Virginia.....	9	241,466	21	265,368	30	506,834	9	398,620
Wisconsin.....	3	254,198	36	842,104	39	1,096,302	6	876,668
Wyoming.....	6	34,491	11	34,028	10	68,519	3	32,426
Total U. S., Sept. 30, 1956....	314	22,491,500	1,454	34,610,010	1,761	57,101,510	546	47,162,246
Total U. S., Sept. 30, 1955....	316	22,183,408	1,454	33,963,951	1,760	56,147,359	541	46,447,658
Total U. S., Sept. 30, 1954....	317	21,705,436	1,448	33,367,044	1,765	55,072,480	544	46,176,450
Total U. S., Sept. 30, 1953....	327	21,412,474	1,458	33,059,812	1,785	54,472,286	544	45,948,554
Total U. S., Sept. 30, 1952....	327	21,159,527	1,459	32,791,088	1,786	53,950,615	545	46,210,136
Total U. S., Sept. 30, 1951....	319	21,222,525	1,454	32,795,413	1,773	54,017,938	543	46,279,358
Total U. S., Sept. 30, 1950....	322	21,266,126	1,450	32,562,946	1,772	53,829,072	549	46,582,348
Total U. S., Sept. 30, 1949....	329	21,004,650	1,451	31,840,901	1,780	52,845,551	546	46,398,968
Total U. S., Sept. 30, 1948....	328	21,081,905	1,453	31,203,392	1,781	52,285,297	530	46,308,081

NOTE: Idaho, Kans., Ky., Mo., N. H. and Pa. "All-Day" Newspapers are listed in morning and evening columns, and their circulations are divided between morning and evening figures. Adjustments have been made in State and U. S. totals.

U. S. Daily Newspapers

Source: Audit Bureau of Circulations: Publishers' Statements for 6-mo. period ending Mar. 31, 1957.

(NOTE: Where two or more newspapers are listed under a city, the order is according to size of total daily circulation.)

City and newspaper	Net Paid Circulation		
	Morning ¹	Evening ¹	Sunday
Akron (Ohio): BEACON JOURNAL.....		162,319	171,080
Albany (N. Y.): TIMES-UNION.....	60,169		120,788
Atlanta: CONSTITUTION (M); JOURNAL (E); JOURNAL & CONSTITUTION (S).....	196,003	262,370	512,559
Baltimore: SUN.....	192,302 ²	217,711 ²	326,550
NEWS-POST (E); AMERICAN (S).....		232,456 ²	338,766
Birmingham: POST-HERALD (M); NEWS (E & S).....	97,299	190,815	231,013
Boston: RECORD (M); AMERICAN (E); ADVERTISER (S).....	401,583 ²	181,160 ²	553,314
HERALD (M & S); TRAVELER (E).....	201,826 ²	193,854 ²	308,376
GLOBE.....	221,970 ²	155,628 ²	439,531
CHRISTIAN SCIENCE MONITOR.....		174,399	
Buffalo: NEWS.....		301,075	
COURIER-EXPRESS.....	171,516		316,268
Charlotte (N. C.): OBSERVER.....	152,709		169,701
Chattanooga: TIMES (M & S); NEWS-FREE PRESS (E).....	55,799	60,926	84,560
Chicago: TRIBUNE.....	943,741		1,319,614
NEWS.....		614,098 ²	
SUN-TIMES.....	595,582 ^{2,3}		652,075
AMERICAN.....		533,363 ²	660,075
WALL STREET JOURNAL (Midwest Edition).....	146,706 ²		
Cincinnati: ENQUIRER.....	220,529		289,371
POST.....		169,050	
TIMES-STAR.....		161,161	
Cleveland: PRESS.....		317,004	
PLAIN DEALER.....	302,266		508,162
NEWS.....		138,462	
Columbus (Ohio): DISPATCH.....		179,407	249,360
Dallas: NEWS.....	208,863		212,242
TIMES HERALD.....		174,409	181,429
Dayton (Ohio): NEWS.....		158,875	187,324
Denver: POST.....		250,450	349,834
ROCKY MOUNTAIN NEWS.....	156,866		166,948
Des Moines: REGISTER (M & S); TRIBUNE (E).....	226,057	136,455	522,098
Detroit: NEWS.....		469,389	585,667
FREE PRESS.....	461,167		507,128
TIMES.....		396,234	501,683
Fort Wayne (Ind.): JOURNAL-GAZETTE (M & S); NEWS-SENTINEL (E).....	62,535	76,571	94,408
Fort Worth: STAR-TELEGRAM.....	115,477	138,328	228,951
Grand Rapids (Mich.): PRESS.....		115,254	
Harrisburg (Pa.): PATRIOT (M); NEWS (E); PATRIOT-NEWS (S).....	40,816	82,470	133,347
Hartford (Conn.): TIMES.....	120,182		
COURANT.....	101,936		149,163
Honolulu: STAR-BULLETIN.....		94,140	
ADVERTISER.....	46,984 ²		73,183
Houston: CHRONICLE.....		209,022 ²	233,613
POST.....	203,743		214,165
PRESS.....		118,025 ²	
Indianapolis: STAR.....	212,047		324,875
NEWS.....		173,600	
Jacksonville (Fla.): TIMES-UNION.....	152,835		159,169
Kansas City (Mo.): STAR (E & S); TIMES (M).....	341,941	348,250	366,441
Knoxville: NEWS-SENTINEL.....		102,071	107,220
Little Rock: ARKANSAS GAZETTE.....	99,573		110,028
Long Beach (Calif.): INDEPENDENT PRESS-TELEGRAM.....	45,401	106,559	142,978
Los Angeles: TIMES.....	462,257		858,745
HERALD & EXPRESS.....		344,028 ²	
EXAMINER.....	350,739		723,509
MIRROR-NEWS.....		308,594 ²	
Louisville: COURIER-JOURNAL (M & S); TIMES (E).....	222,546	177,882	311,094
Memphis: COMMERCIAL APPEAL (M & S); PRESS SCIMITAR (E).....	211,459	147,020	263,076
Miami: HERALD.....	287,449		345,387

¹ Unless otherwise indicated, figure is an average of the Monday-through-Saturday circulation. ² Figure is an average of the Monday-through-Friday circulation; i.e., Saturday circulation, if any, has not been used in making the average. ³ Published all day. ⁴ Post office address is Garden City, N. Y.

City and newspaper	Net Paid Circulation		
	Morning ¹	Evening ¹	Sunday
NEWS		149,269	121,681
Milwaukee: JOURNAL		354,879	497,947
SENTINEL	190,037		233,780
Minneapolis: STAR (E); TRIBUNE (M & S)	207,538	290,542	627,122
Nashville: TENNESSEAN	119,508		201,436
Nassau County (Long Island, N. Y.): NEWSDAY ⁴		268,626	
New Orleans: TIMES-PICAYUNE (M); STATES (E); TIMES-PICAYUNE-STATES (S)	190,915	105,484 ²	288,453
New York: NEWS	2,083,972 ²		3,620,275
MIRROR	876,938 ²		1,477,582
JOURNAL-AMERICAN		698,881 ²	863,575
TIMES	622,843 ²		1,277,140
WORLD-TELEGRAM & SUN		577,891 ²	242,522
POST		428,817	293,235
HERALD TRIBUNE	367,248 ²		576,488
LONG ISLAND PRESS (Jamaica, N. Y.)		274,204	342,835
WALL STREET JOURNAL (Eastern Edition)	201,460 ²		
Newark (N. J.): NEWS		200,276 ²	340,277
STAR-LEDGER	214,920		357,651
Norfolk-Portsmouth-So. Norfolk: VIRGINIAN PILOT (M); NORFOLK LEDGER-DISPATCH & PORTSMOUTH STAR (E); VIRGINIAN PILOT & PORTSMOUTH STAR (S)	107,323	93,684	140,496
Oakland (Calif.): TRIBUNE		208,852	235,354
Oklahoma City: OKLAHOMAN (M & S); TIMES (E)	150,203	111,686	247,346
Omaha: WORLD-HERALD	128,231	122,126	262,439
Philadelphia: BULLETIN		718,007 ²	755,595
INQUIRER	609,350 ²		1,160,783
NEWS		192,401	
Phoenix: REPUBLIC (M & S); GAZETTE (E)	110,389	68,724	160,399
Pittsburgh: PRESS		301,859	515,193
POST-GAZETTE	269,819		
SUN-TELEGRAPH		176,662	413,493
Portland (Maine): PRESS-HERALD (M); EXPRESS (E); TELEGRAM (S)	50,719	30,104	95,315
Portland (Oreg.): OREGONIAN	232,338		296,204
OREGON JOURNAL		181,210 ²	200,020
Providence (R. I.): JOURNAL (M & S); BULLETIN (E)	55,970	148,199	186,209
Raleigh (N. C.): NEWS & OBSERVER (M & S); TIMES (E)	124,200	22,028	137,805
Richmond (Va.): TIMES-DISPATCH (M & S); NEWS-LEADER (E)	133,671	106,082	185,153
Rochester (N. Y.): DEMOCRAT & CHRONICLE (M & S); TIMES-UNION (E)	125,405	128,147	182,775
Sacramento: BEE		148,467	
St. Louis: POST-DISPATCH		411,061 ²	521,224
GLOBE-DEMOCRAT	315,441 ²		374,251
St. Paul: DISPATCH (E); PIONEER PRESS (M & S)	94,276	124,822	197,916
Salt Lake City: TRIBUNE (M & S); DESERET NEWS-SALT LAKE TELEGRAM (E)	98,115	87,775	180,358
San Antonio: EXPRESS (M); NEWS (E); EXPRESS-NEWS (S)	67,401 ²	77,614 ²	109,618
LIGHT		104,996 ²	131,150
San Diego: EVENING TRIBUNE		113,366	
UNION	80,757		174,221
San Francisco: EXAMINER	250,132		503,369
CHRONICLE	190,045		254,130
CALL-BULLETIN		140,351 ²	
NEWS		109,602 ²	
Seattle: TIMES		215,153 ²	248,617
POST-INTELLIGENCER	190,929		261,292
Shreveport (La.): TIMES (M & S); JOURNAL (E)	87,982	52,765	108,538
South Bend-Mishawaka (Ind.): TRIBUNE		110,233	113,901
Spokane (Wash.): SPOKESMAN-REVIEW	92,777		147,268
Syracuse (N. Y.): HERALD-JOURNAL (E); HERALD-AMERICAN (S)		136,752	219,561
Tampa (Fla.): TRIBUNE	134,597		154,212
Toledo: BLADE		194,501	184,067
Tulsa (Okla.): WORLD (M & S); TRIBUNE (E)	95,089	76,808	154,935
Washington (D. C.): POST & TIMES HERALD	390,461 ²		425,842
EVENING STAR; SUNDAY STAR		259,275 ²	289,619
NEWS		178,491 ²	
Wichita (Kans.): EAGLE	103,340	72,686	122,437
BEACON		98,032	129,154
Winston-Salem: JOURNAL (M); TWIN CITY SENTINEL (E); JOURNAL-SENTINEL (S)	60,365	37,080	73,131
Worcester (Mass.): TELEGRAM (M & S); GAZETTE (E)	56,678	103,861	106,655
Youngstown (Ohio): VINDICATOR & TELEGRAM		100,227	144,664

Leading Magazines: United States and Canada

Source: Audit Bureau of Circulations: Publishers' Statements for 6-month period ending Dec. 31, 1956.

Magazine	Circulation ¹	Magazine	Circulation ¹
American Girl (M)	587,214	Motion Picture (M)	805,923
American Home (M)	3,150,764	National Geographic Magazine (M)	2,144,704
Argosy (M)	1,385,321	Nation's Business (M)	779,902
Better Homes & Gardens (M)	4,302,019	Newsweek (W)	1,091,674
Boys' Life (M)	1,466,041	Outdoor Life (M)	940,376
Canadian Home Journal (M) ²	440,117	Parents (M)	1,686,047
Charm (M)	664,563	Photoplay (M)	1,435,551
Chatelaine (M) ²	425,293	Playboy (M)	795,965
Confidential (BM)	3,269,954	Popular Mechanics (M)	1,294,925
Coronet (M)	2,735,758	Popular Science (M)	1,192,567
Cosmopolitan (M)	905,011	Reader's Digest (M)	10,718,943
Esquire (M)	786,156	Reader's Digest (Canadian-Eng- lish) (M) ²	775,888
Everywoman's (M)	1,766,532	Redbook (M)	2,395,580
Family Circle (M)	3,928,826	Saturday Evening Post (W)	4,950,061
Field & Stream (M)	942,384	Science & Mechanics (BM)	571,982
Glamour (M)	605,593	Secrets (M)	680,170
Good Housekeeping (M)	3,815,085	Seventeen (M)	1,014,832
Grit (W)	816,352	Sports Afield (M)	928,356
Holiday (M)	869,690	Sports Illustrated (W)	660,320
House & Garden (M)	532,010	Stag (M)	526,556
House Beautiful (M)	714,018	Sunset (M)	578,744
Household (M)	2,692,575	Time (W)	2,059,536
Ladies Home Journal (M)	5,320,300	Town Journal (M) ³	2,045,205
Liberty (M) ²	511,945	True (M)	2,227,483
Life (W)	5,738,226	True Confessions (M)	1,382,853
Living for Young Homemakers (M)	631,839	True Romance (M)	749,793
Look (BW)	4,191,057	True Story (M)	2,688,987
Maclean's Magazine (BW) ²	516,587	TV Guide (all editions) (W)	4,218,832
Mademoiselle (M)	519,586	TV Radio Mirror (M)	648,216
Male (M)	502,024	U.S. News & World Report (W)	867,672
McCall's (M)	4,830,102	Woman's Day (M)	3,141,051
Mechanix Illustrated (M)	1,040,989	Workbasket (M)	1,287,147
Modern Romances (M)	1,083,234		
Modern Screen (M)	1,301,594		

¹ Average net paid circulation. This listing is limited to magazines of general circulation, excluding membership and special purpose magazines. U. S. magazines whose circulation exceeds 500,000, and Canadian magazines above 400,000 are included. ² Canadian. ³ Discontinued with Feb. 1957 issue. NOTE: W—weekly; M—monthly; BW—biweekly; BM—bimonthly.

Radio and Television Stations and Networks

Source: National Association of Radio and Television Broadcasters.

Major networks	Standard broadcast stations (May 1, 1957)		TV Stations (May 1, 1957)	
	Owned and operated	Affiliated	Owned and operated	
ABC—American Broadcasting Company	5	323	5	
CBS—Columbia Broadcasting System	6	210	6**	
MBS—Mutual Broadcasting System .....	..	492	..	
NBC—National Broadcasting Company	6	197	7	

Number of stations* (June 1, 1957)	Operating	Permits for construction	Total
Standard broadcast	3,060	167	3,237
FM (Frequency modulation)	532†	27	559
Television	519†	126	645

* Including territories and possessions. ** Includes one CP operating on special temporary authority. † Includes 14 CP's operating on special temporary authority. ‡ Includes 192 CP's operating on special temporary authority.

Patents

Source: Patent Office.

A patent, in the most general sense, is a document issued by a government, conferring some special right or privilege. The term is now restricted mainly to patents for inventions; occasionally, land patents.

The grant of a patent for an invention gives the inventor the privilege, for a limited period of time, of excluding others from practicing a certain art or from making, using, or selling a certain article. However, it does not give him the right to make, use, or sell his own invention if it is an improvement on some unexpired patent whose claims are infringed thereby.

In the U. S., the law provides that a patent may be granted, for a term of 17 years, to any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, as well as any new and useful improvements thereof. A patent may also be granted to a person who has invented or discovered and asexually reproduced a new and distinct variety of plant (other than a tuber-propagated one) or has invented a new, original and ornamental design for an article of manufacture.

A patent is granted only upon a regularly

filed application, complete in all respects; upon payment of the fees; and upon determination that the disclosure is complete and that the invention is new and useful. The disclosure must be of such nature as to enable others to reproduce the invention.

A complete application, which must be addressed to the Commissioner of Patents, Washington, D. C., consists of a petition, specification and claims, oath, drawing (whenever the nature of the case admits of it) and a filing fee of \$30 for cases having 20 claims or less. An additional fee of \$1 per claim is required for cases having more than 20 claims. The filing fee is not returned to the applicant if the patent is refused. If the patent is allowed, another fee of \$30 (and \$1 each for claims allowed in excess of 20) is required before the patent is issued. The fees for design patents vary.

Applications are considered in the order in which they are received. Patents are not granted for printed matter, for methods of doing business or for devices for which claims contrary to natural laws are made. Applications for a perpetual-motion machine have been made from time to time, but until a working model is presented that actually fulfills the claim, no patent will be issued.

Trademarks

Source: Patent Office.

A trademark may be defined as a word, letter, device or symbol, as well as some combination of these, which is used in connection with merchandise and which points distinctly to the origin or ownership of it.

Certificates of registration of trademarks are issued under the seal of the Patent Office and may be registered by the owner if he is engaged in interstate or foreign commerce, since any Federal jurisdiction over trademarks arises under the commerce clause of the Constitution. Trademarks may be registered by foreign owners who comply with our law, as well as by citizens of foreign countries with which the U. S. has treaties relating to trademarks. American citizens may register trademarks in foreign

countries by complying with the laws of those countries. The right to registration and protection of trademarks in many foreign countries is guaranteed by treaties.

General jurisdiction in trademark cases is given to the Federal courts. Decisions of examiners on applications or oppositions are subject to appeal to the Commissioner of Patents and from him to the U. S. Court of Customs and Patent Appeals. Before adopting a trademark, a person should make a search of prior marks in order to avoid infringing unwittingly upon them.

The duration of a trademark registration is 20 years, but it may be renewed indefinitely for 20-year periods, provided the trademark is still in use at the time of expiration.

Television Statistics

Source: ELECTRONIC TECHNICIAN Magazine, Caldwell-Clements, Inc.

Year	TV sets mfd.	Retail value	Picture tubes mfd.	Retail value	TV stations	Homes with TV*	TV sets in use in U. S.
1946.....	10,000	\$ 5,000,000	20,000	\$ 1,000,000	5	8,000	8,000
1947.....	250,000	100,000,000	300,000	15,000,000	20	250,000	250,000
1948.....	1,000,000	350,000,000	1,500,000	75,000,000	44	1,000,000	1,000,000
1949.....	3,000,000	950,000,000	3,500,000	210,000,000	100	4,000,000	4,000,000
1950.....	7,500,000	2,700,000,000	8,000,000	400,000,000	107	10,400,000	10,500,000
1951.....	5,600,000	2,100,000,000	6,000,000	300,000,000	108	15,500,000	15,750,000
1952.....	6,300,000	2,360,000,000	6,500,000	260,000,000	123	21,000,000	22,210,000
1953.....	7,300,000	1,675,000,000	9,000,000	360,000,000	350	26,000,000	28,000,000
1955.....	7,800,000	1,350,000,000	11,100,000	400,000,000	460	34,000,000	39,400,000
1956.....	7,300,000	1,241,000,000	11,400,000	370,000,000	495	37,000,000	43,900,000

* Includes dwellings such as apartment hotels.

Copyrights

Source: Copyright Office.

A copyright is a statutory right obtained by authors, musicians and artists or their assigns, upon compliance with the provisions of the copyright law, to prevent the reproduction of their works without their consent. The U. S. Constitution (Article I, Section 8) empowers Congress "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." The copyright owner possesses the exclusive right to print, reprint, publish, copy and vend the copyrighted work. Among some of the other rights possessed by the copyright owner are the exclusive rights to translate and dramatize literary works, to control public performance of dramas, and, in the case of nondramatic literary works and musical compositions, to control public performance for profit. Special provisions in regard to mechanical reproductions of musical compositions are included. Copyright protection extends to books; pamphlets; periodicals and contributions to periodicals; lectures, sermons, and monologues; dramas and dramatical musical compositions; musical compositions; maps; works of art or models and designs for works of art; reproductions of a work of art; drawings or plastic works of scientific or technical character; photographs, prints, and pictorial illustrations; commercial prints and labels; and motion pictures.

Copyright term endures 28 years from date of registration in the Copyright Office for unpublished material and from the date of publication for published works. The copyright may be renewed for an additional period of 28 years, provided application for such renewal is made within one year prior to the date of expiration of the original term. The copyright of a book or similar publication is secured by publication of such work after printing on the title page, or the page immediately following, the required copyright notice. This notice consists of the word *Copyright* or the abbreviation *Copr.*, the year of publication, and the name of the copyright owner. It is important to bear in mind that copyright comes into being at the time of first publication if this required notice appears on the work. If publication occurs without this notice, the work falls into the public domain, and the Copyright

Office cannot register the claim. In short, the Copyright Office does not grant copyrights; the obtaining of such protection depends on whether or not the claimant follows the statutory formalities at the time of publication. In view of the fact that those formalities vary with the different classes of works subject to copyright, persons interested in securing copyright should obtain circular No. 35 from the Register of Copyrights, Library of Congress, Washington 25.

The law requires that, promptly after the work has been published, two copies thereof (foreign works, one copy) must be promptly deposited in the Copyright Office. These copies should be accompanied by the proper application form and the statutory fee of \$4. If the work is a commercial print or label used with the sale or advertisement of an article of merchandise, the fee is \$6.

Effective June 3, 1949, the term of ad interim protection for books and periodicals in the English language first published abroad was extended to five years. Such works may be imported into the U. S. up to a total of 1,500 copies after ad interim registration has been obtained. The above amendment to the law also affords to the foreign author or publishers an option of obtaining registration without payment of the usual statutory fee if an extra copy of the work, accompanied by a catalogue card, is submitted to the Copyright Office within six months of first publication abroad.

The Act of Aug. 31, 1954, modified a number of existing formalities, primarily with regard to certain foreign works, and was designed to implement the Universal Copyright Convention, which was ratified by the Senate on June 25, 1954, and took effect on Sept. 16, 1955. One principal modification is that U. S. authors and publishers may use the symbol © instead of the word *Copyright* or the abbreviation *Copr.* The symbol must be accompanied by the year date of first publication and the name of the copyright claimant. The use of this form may obtain automatic copyright protection in member countries of the Universal Copyright Convention.

Application forms, etc., may be obtained free from the Copyright Office. Bulletin 14, the U. S. copyright law, can be purchased from the Register of Copyrights for 25¢.

Radio and Audio Statistics for U. S.

Source: ELECTRONIC TECHNICIAN Magazine, Caldwell-Clements, Inc.

Radio†		Audio	
Radios: Homes with*	52,000,000	Phonographs sold, 1956	4,200,000
Secondary sets in homes	44,200,000	Phonographs in U. S.	32,400,000†
Sets in business	11,000,000	Tape recorders sold, 1956	445,000
Automobile radios	38,100,000	Tape recorders in U. S.	2,200,000†
Total radios	145,300,000	Audio replacement components‡	\$14,000,000
Amateur stations	120,000	Hi-fi audio \$ volume‡	\$125,000,000

* Includes dwellings such as apartment hotels. † As of Jan. 1, 1957. ‡ 1956 sales.

Motor Vehicle Laws as of 1957

Source: American Automobile Association.

State	Speed limit ¹	Date new license plates can be used	Driving license Re-quired	Mini-mum age	Gaso-line tax	Per cent sales tax	Period of stay ²	Safety respon-sibility law	Certi-ficate of title required
Alabama.....	60 pf AF	Oct. 1	yes	16	\$.07	1	Reciprocal	yes	no
Arizona.....	AK pf	Dec. 1	yes	18	.05	2	(⁴)	yes	yes
Arkansas.....	60 pf AK	Jan. 1	yes	14	.065	3	30 days	yes	yes
California.....	55 pf A	Jan. 1	yes	16	.06	3	(¹³)	yes	yes
Colorado.....	60 pf A	Jan. 1	yes	16	.06	2	Reciprocal	yes	yes
Connecticut.....	AJ pf ²⁴	Mar. 1	yes	16	.06	3 ⁸	6 months ²⁵	yes	no
Delaware.....	50 C FML	(⁷)	yes	16	.05	...	Reciprocal	yes	yes
D. C.....	25 K FML	Mar. 1	yes	16	.06	2 ⁹	Reciprocal	yes	yes
Florida.....	60 pf D	Jan. 1	yes	16	.07	...	Reciprocal	yes	yes
Georgia.....	60 I FML	Jan. 1	yes	16	.065	3	30 days	yes	no
Idaho.....	60 pf AI	Dec. 1	yes	16	.06	...	Reciprocal	yes	yes
Illinois.....	A pf K	Dec. 1	yes	16	.05	2½	Reciprocal	yes	yes
Indiana.....	65 pf AK ¹⁸	Jan. 2	yes	16	.06	...	60 days	yes	yes
Iowa.....	A	Dec. 1	yes	16	.06	2½	Reciprocal	yes	yes
Kansas.....	70 L	Jan. 1	yes	16	.05	2	(¹⁹)	yes	yes
Kentucky.....	60 F FML	Dec. 29	yes	16	.07	...	Reciprocal	yes	(⁹)
Louisiana.....	60 pf A	Dec. 1	yes	15	.07	2	Reciprocal	yes	yes
Maine.....	45 pf A	Dec. 25	yes	15	.07	2	Reciprocal	yes	no
Maryland.....	50 pf AE	Mar. 1	yes	16	.06	2	30 days	yes	yes
Massachusetts.....	40 pf A	Jan. 1	yes	16	.055	(⁹)	Reciprocal ¹⁰	(¹¹)	no
Michigan.....	65 I	(²⁶)	yes	16	.06	3	90 days	yes	yes
Minnesota.....	60 pf D	Nov. 15	yes	15	.05	...	Reciprocal	yes	yes
Mississippi.....	60 FML	Nov. 1	yes	17	.07	3	30 days	yes	yes
Missouri.....	AK	On issue	yes	16	.03	2	Reciprocal	yes	yes
Montana.....	65 K ⁵	Jan. 1	yes	15	.07	...	30 days ^{12,14}	yes	yes
Nebraska.....	60 FK FML	Jan. 1	yes	15½	.06	...	(¹⁵)	yes	yes
Nevada.....	A	Jun. 1	yes	16	.06	2	(²⁷)	yes	yes
New Hampshire.....	50 pf AK	Mar. 1	yes	16	.05	...	Reciprocal	yes	no
New Jersey.....	50 K	On issue	yes	17	.04	...	Reciprocal	yes ¹⁹	yes
New Mexico.....	70 K	Dec. 15	yes	16	.06	1	(²⁰)	yes	yes
New York.....	50 K FML ²¹	Jan. 1	yes	18	.04	...	Reciprocal	(¹¹)	no
North Carolina.....	55 FML	Jan. 1	yes	16	.07	(¹⁶)	Reciprocal	yes	yes
North Dakota.....	65 I	Nov. 1	yes	16	.06	2	Reciprocal	yes	yes
Ohio.....	60 pf A	Mar. 1	yes	16	.05	3	Reciprocal	yes	yes
Oklahoma.....	65 I	Dec. 11	yes	16	.065	2	30 days ¹⁷	yes	yes
Oregon.....	55 pf A ²¹	On issue	yes	16	.06	...	Reciprocal	yes	yes
Pennsylvania.....	50 FML K	Mar. 15	yes	16	.05	3	Reciprocal	yes	yes
Rhode Island.....	50 pf H	Mar. 1	yes	16	.04	3	Reciprocal	yes	no
South Carolina.....	55 pf	Sept. 17	yes	14	.07	3	90 days	yes	no
South Dakota.....	60 pf AF	Jan. 1	yes	15	.06	2 ⁸	60 days	yes	yes
Tennessee.....	65 I	Mar. 1	yes	16	.07	3	30 days	yes	yes
Texas.....	60 pf AI	Feb. 1	yes	16	.05	1.1	Reciprocal	yes	yes
Utah.....	60 pf F	Jan. 1	yes	16	.06	2	Reciprocal	yes	yes
Vermont.....	50 FML ²²	Mar. 1	yes	16	.055	...	Reciprocal	yes	no
Virginia.....	55 FML ²³	Mar. 15	yes	15	.06	...	6 months	yes	yes
Washington.....	60 KA	Jan. 1	yes	16	.065	3½	Reciprocal	yes	yes
West Virginia.....	55 A	June 1	yes	16	.06	2	Rec. 3 mo.	yes	yes
Wisconsin.....	65 IA	On issue	yes	16	.06	...	Reciprocal	yes	yes
Wyoming.....	60 pf	Dec. 1	yes	15	.05	2	90 days	yes	yes

¹ A—reasonable and proper; B—lower speed at night and on old highways; C—55 mph on 4-lane highways; D—50 mph pf at night; E—55 mph on dual-lane highways; F—50 mph at night; G—60 mph where marked; H—45 mph at night; I—55 mph at night; J—parkways to 55 mph where marked; K—unless otherwise marked; L—60 mph at night; pf—prima facie limit; FML—fixed maximum limits. ² Applies to nonresidents. The term "reciprocal" means that the state will extend to a nonresident the identical privileges granted by his home state to nonreciprocal motorists. In some states, visitors must register with a specified time. In most states, persons who intend to reside permanently must buy new plates and secure new driving license at once, or within a limited time. Acquisition of employment or placing children in public school is often considered intention to reside permanently. ³ Registry tax on first registration. ⁴ Visitor's permit required after 10 days. ⁵ Daytime; 55 mph at night. ⁶ Sales or use tax on new cars, first registration of used cars. ⁷ Three months before current registration expires. ⁸ Bill of sale must be filed. ⁹ Excise tax. ¹⁰ Public liability insurance required after 30 days. ¹¹ State has compulsory insurance. ¹² Visitors must register immediately. ¹³ Until home-state license plates expire. ¹⁴ Extension granted. ¹⁵ Nebraska operator's license required in 30 days. ¹⁶ \$15 maximum. ¹⁷ Visitors must register within 15 days. ¹⁸ For automobiles; busses license required in 30 days. ¹⁹ State has "Unsatisfactory Judgment Fund" law. ²⁰ Nonresident car must bear valid registration plates of place of residence of owner. ²¹ It is a traffic offense to drive unreasonably slow. ²² Unless otherwise posted; trucks and busses 45 mph. ²³ Passenger vehicles; trucks 45 mph. ²⁴ In accord with posted limits. ²⁵ Not to exceed 6 months when employed in state. ²⁶ At discretion of Secretary of State. ²⁷ No limit, unless residence is established or employment accepted; Nevada license must then be secured immediately.

Road Mileages Between U. S. Cities

Source: American Automobile Association.

Cities	Birmingham	Boston	Buffalo	Chicago	Cleveland	Dallas	Denver
Birmingham, Ala. ....	.....	1,223	1,130	663	751	659	1,379
Boston, Mass.	1,223	.....	463	980	651	1,728	2,025
Buffalo, N. Y.	1,130	463	.....	524	188	1,427	1,562
Chicago, Ill.	663	980	524	.....	349	1,006	1,038
Cleveland, Ohio	751	651	188	349	.....	1,139	1,351
Dallas, Tex.	659	1,728	1,427	1,006	1,139	.....	800
Denver, Colo.	1,379	2,025	1,562	1,038	1,351	800	.....
Detroit, Mich.	759	735	252	272	167	1,278	1,323
El Paso, Tex.	1,286	2,527	1,938	1,654	1,750	627	725
Houston, Tex.	742	1,965	1,549	1,173	1,361	243	1,043
Indianapolis, Ind.	508	935	488	186	300	928	1,051
Kansas City, Mo.	714	1,429	982	503	794	527	644
Los Angeles, Calif.	2,121	3,162	2,699	2,175	2,457	1,486	1,202
Louisville, Ky.	394	971	550	300	362	892	1,168
Memphis, Tenn.	248	1,360	958	541	765	474	1,131
Miami, Fla.	803	1,540	1,434	1,384	1,346	1,346	2,182
Minneapolis, Minn.	1,105	1,421	958	434	783	991	916
New Orleans, La.	357	1,580	1,392	943	1,108	490	1,280
New York, N. Y.	851	208	384	850	501	1,646	1,833
Omaha, Nebr.	926	1,472	1,010	486	835	699	552
Philadelphia, Pa.	759	301	393	756	426	1,576	1,763
Phoenix, Ariz.	1,699	2,834	2,245	1,816	2,057	1,040	826
Pittsburgh, Pa.	812	576	223	463	131	1,278	1,465
St. Louis, Mo.	548	1,196	729	300	541	706	901
Salt Lake City, Utah	1,890	2,424	1,964	1,440	1,789	1,270	511
San Francisco, Calif.	2,443	3,186	2,723	2,199	2,548	1,807	1,270
Seattle, Wash.	2,779	3,098	2,600	2,076	2,608	2,153	1,403
Washington, D. C.	769	435	407	698	368	1,399	1,614

Cities	Detroit	El Paso	Houston	Indianapolis	Kansas City	Los Angeles	Louisville
Birmingham, Ala.	759	1,286	742	508	714	2,121	394
Boston, Mass.	735	2,527	1,965	935	1,429	3,162	971
Buffalo, N. Y.	252	1,938	1,549	488	982	2,699	550
Chicago, Ill.	272	1,654	1,173	186	503	2,175	300
Cleveland, Ohio	167	1,750	1,361	300	794	2,457	362
Dallas, Tex.	1,278	627	243	928	527	1,486	892
Denver, Colo.	1,323	725	1,043	1,051	644	1,202	1,168
Detroit, Mich. ....	.....	1,722	1,307	272	766	2,447	370
El Paso, Tex.	1,722	.....	750	1,450	1,039	816	1,416
Houston, Tex.	1,307	750	.....	1,035	770	1,566	999
Indianapolis, Ind.	272	1,450	1,035	.....	498	2,196	114
Kansas City, Mo.	766	1,039	770	498	.....	1,728	524
Los Angeles, Calif.	2,447	816	1,566	2,196	1,728	.....	2,183
Louisville, Ky.	370	1,416	999	114	524	2,183	.....
Memphis, Tenn.	716	1,091	591	444	466	1,874	381
Miami, Fla.	1,407	1,998	1,288	1,274	1,526	2,832	1,126
Minneapolis, Minn.	706	1,480	1,234	620	464	2,018	734
New Orleans, La.	1,116	1,135	385	844	868	1,976	751
New York, N. Y.	636	2,161	1,593	727	1,221	3,025	773
Omaha, Nebr.	758	1,045	942	591	212	1,689	736
Philadelphia, Pa.	580	2,091	1,501	657	1,151	2,919	693
Phoenix, Ariz.	2,029	413	1,163	1,757	1,346	403	1,783
Pittsburgh, Pa.	287	1,793	1,394	359	853	2,621	395
St. Louis, Mo.	515	1,209	821	241	257	1,916	267
Salt Lake City, Utah	1,712	1,137	1,537	1,547	1,155	735	1,679
San Francisco, Calif.	2,471	1,221	2,019	2,306	1,914	415	2,438
Seattle, Wash.	2,531	2,078	2,449	2,262	2,047	1,177	2,547
Washington, D. C.	522	2,026	1,511	563	1,051	2,799	599

Road Mileages Between U. S. Cities

Source: American Automobile Association.

Cities	Memphis	Miami	Minneapolis	New Orleans	New York	Omaha	Philadelphia
Birmingham, Ala.	248	803	1,105	357	851	926	759
Boston, Mass.	1,360	1,540	1,421	1,580	208	1,472	301
Buffalo, N. Y.	958	1,434	958	1,392	384	1,010	393
Chicago, Ill.	541	1,384	434	943	850	486	756
Cleveland, Ohio	765	1,346	783	1,108	501	835	426
Dallas, Tex.	474	1,346	991	490	1,646	699	1,576
Denver, Colo.	1,131	2,182	916	1,280	1,333	552	1,763
Detroit, Mich.	716	1,407	706	1,116	636	758	580
El Paso, Tex.	1,091	1,998	1,480	1,135	2,161	1,045	2,091
Houston, Tex.	591	1,288	1,234	385	1,593	942	1,501
Indianapolis, Ind.	444	1,274	620	844	727	591	657
Kansas City, Mo.	466	1,526	464	868	1,221	212	1,151
Los Angeles, Calif.	1,874	2,832	2,018	1,976	3,025	1,689	2,919
Louisville, Ky.	381	1,126	734	751	773	736	693
Memphis, Tenn. ....	....	1,022	863	400	1,152	678	1,060
Miami, Fla.	1,022	....	1,818	899	1,332	1,738	1,224
Minneapolis, Minn.	863	1,818	....	1,275	1,284	364	1,190
New Orleans, La.	400	899	1,275	....	1,208	1,080	1,116
New York, N. Y.	1,152	1,332	1,284	1,208	....	1,300	93
Omaha, Nebr.	678	1,738	364	1,080	1,300	....	1,230
Philadelphia, Pa.	1,060	1,224	1,190	1,116	93	1,230	....
Phoenix, Ariz.	1,474	2,411	1,742	1,548	2,474	1,378	2,534
Pittsburgh, Pa.	804	1,276	897	1,169	368	932	298
St. Louis, Mo.	301	1,269	562	701	968	469	898
Salt Lake City, Utah	1,619	2,607	1,283	1,801	2,290	954	2,184
San Francisco, Calif.	2,195	3,270	2,141	2,297	3,049	1,713	2,943
Seattle, Wash.	2,532	3,582	1,642	2,683	2,926	1,773	2,832
Washington, D. C.	925	1,111	1,132	1,150	227	1,167	135

Cities	Phoenix	Pittsburgh	St. Louis	Salt Lake City	San Francisco	Seattle	Washington
Birmingham, Ala.	1,699	812	548	1,890	2,443	2,779	769
Boston, Mass.	2,834	576	1,196	2,424	3,186	3,098	435
Buffalo, N. Y.	2,245	223	729	1,964	2,723	2,600	407
Chicago, Ill.	1,816	463	300	1,440	2,199	2,076	698
Cleveland, Ohio	2,057	131	541	1,789	2,548	2,608	368
Dallas, Tex.	1,040	1,278	706	1,270	1,807	2,153	1,399
Denver, Colo.	826	1,465	901	511	1,270	1,403	1,614
Detroit, Mich.	2,029	287	515	1,712	2,471	2,531	522
El Paso, Tex.	413	1,793	1,209	1,137	1,221	2,078	2,026
Houston, Tex.	1,163	1,394	821	1,537	2,019	2,449	1,511
Indianapolis, Ind.	1,757	359	241	1,547	2,306	2,262	563
Kansas City, Mo.	1,346	853	257	1,155	1,914	2,047	1,051
Los Angeles, Calif.	403	2,621	1,916	735	415	1,177	2,799
Louisville, Ky.	1,783	395	267	1,679	2,438	2,547	599
Memphis, Tenn.	1,474	804	301	1,619	2,195	2,532	925
Miami, Fla.	2,411	1,276	1,269	2,607	3,270	3,582	1,111
Minneapolis, Minn.	1,742	897	562	1,283	2,141	1,642	1,132
New Orleans, La.	1,548	1,169	701	1,801	2,297	2,683	1,150
New York, N. Y.	2,474	368	968	2,290	3,049	2,926	227
Omaha, Nebr.	1,378	932	469	954	1,713	1,773	1,167
Philadelphia, Pa.	2,534	298	898	2,184	2,943	2,832	135
Phoenix, Ariz. ....	....	2,116	1,516	763	827	1,531	2,399
Pittsburgh, Pa.	2,116	....	600	1,886	2,145	2,438	235
St. Louis, Mo.	1,516	600	....	1,412	2,171	2,259	804
Salt Lake City, Utah	763	1,886	1,412	....	759	889	1,778
San Francisco, Calif.	827	2,145	2,171	759	....	874	2,885
Seattle, Wash.	1,531	2,438	2,259	889	874	....	2,673
Washington, D. C.	2,399	235	804	1,778	2,885	2,673	....

Air Distances Between U. S. Cities

Source: U. S. Coast and Geodetic Survey.

Cities	Birmingham	Boston	Buffalo	Chicago	Cleveland	Dallas	Denver
Birmingham, Ala. ....	.....	1,052	776	578	618	581	1,095
Boston, Mass.	1,052	.....	400	851	551	1,551	1,769
Buffalo, N. Y.	776	400	.....	454	173	1,198	1,370
Chicago, Ill.	578	851	454	.....	308	803	920
Cleveland, Ohio	618	551	173	308	.....	1,025	1,227
Dallas, Tex.	581	1,551	1,198	803	1,025	.....	663
Denver, Colo.	1,095	1,769	1,370	920	1,227	663	.....
Detroit, Mich.	641	613	216	238	90	999	1,156
El Paso, Tex.	1,152	2,072	1,692	1,252	1,525	572	557
Houston, Tex.	567	1,605	1,286	960	1,114	225	879
Indianapolis, Ind.	433	807	435	165	263	763	1,000
Kansas City, Mo.	579	1,251	861	414	700	451	558
Los Angeles, Calif.	1,802	2,596	2,198	1,745	2,049	1,240	831
Louisville, Ky.	331	826	483	269	311	726	1,038
Memphis, Tenn.	217	1,137	803	482	630	420	879
Miami, Fla.	665	1,255	1,181	1,188	1,087	1,111	1,726
Minneapolis, Minn.	862	1,123	731	355	630	862	700
New Orleans, La.	312	1,359	1,086	833	924	443	1,082
New York, N. Y.	864	188	292	713	405	1,374	1,631
Omaha, Nebr.	732	1,282	883	432	739	586	488
Philadelphia, Pa.	783	271	279	666	360	1,299	1,579
Phoenix, Ariz.	1,456	2,300	1,906	1,453	1,749	887	586
Pittsburgh, Pa.	608	483	178	410	115	1,070	1,320
St. Louis, Mo.	400	1,038	662	262	492	547	796
Salt Lake City, Utah	1,466	2,099	1,699	1,260	1,568	999	371
San Francisco, Calif.	2,013	2,699	2,300	1,858	2,166	1,483	949
Seattle, Wash.	2,082	2,493	2,117	1,737	2,026	1,681	1,021
Washington, D. C.	661	393	292	597	306	1,185	1,494

Cities	Detroit	El Paso	Houston	Indianapolis	Kansas City	Los Angeles	Louisville
Birmingham, Ala.	641	1,152	567	433	579	1,802	331
Boston, Mass.	613	2,072	1,605	807	1,251	2,596	826
Buffalo, N. Y.	216	1,692	1,286	435	861	2,198	483
Chicago, Ill.	238	1,252	960	165	414	1,745	269
Cleveland, Ohio	90	1,525	1,114	263	700	2,049	311
Dallas, Tex.	999	572	225	763	451	1,240	726
Denver, Colo.	1,156	557	879	1,000	558	831	1,038
Detroit, Mich. ....	.....	1,479	1,105	240	645	1,983	316
El Paso, Tex.	1,479	.....	676	1,264	839	701	1,254
Houston, Tex.	1,105	676	.....	865	644	1,374	803
Indianapolis, Ind.	240	1,264	865	.....	453	1,809	107
Kansas City, Mo.	645	839	644	453	.....	1,356	480
Los Angeles, Calif.	1,983	701	1,374	1,809	1,356	.....	1,829
Louisville, Ky.	316	1,254	803	107	480	1,829	.....
Memphis, Tenn.	623	976	484	384	369	1,603	320
Miami, Fla.	1,152	1,643	968	1,024	1,241	2,339	919
Minneapolis, Minn.	543	1,157	1,056	511	413	1,524	605
New Orleans, La.	939	983	318	712	680	1,673	623
New York, N. Y.	482	1,905	1,420	646	1,097	2,451	652
Omaha, Nebr.	669	878	794	525	166	1,315	580
Philadelphia, Pa.	443	1,836	1,341	585	1,038	2,394	582
Phoenix, Ariz.	1,690	346	1,017	1,499	1,049	357	1,508
Pittsburgh, Pa.	205	1,590	1,137	330	781	2,136	344
St. Louis, Mo.	455	1,034	679	231	238	1,589	242
Salt Lake City, Utah	1,492	689	1,200	1,356	925	579	1,402
San Francisco, Calif.	2,091	995	1,645	1,949	1,506	347	1,986
Seattle, Wash.	1,938	1,376	1,891	1,872	1,506	959	1,943
Washington, D. C.	396	1,728	1,220	494	945	2,300	476

Air Distances Between U. S. Cities

Source: U. S. Coast and Geodetic Survey.

Cities	Memphis	Miami	Minneapolis	New Orleans	New York	Omaha	Philadelphia
Birmingham, Ala.	217	665	862	312	864	732	783
Boston, Mass.	1,137	1,255	1,123	1,359	188	1,282	271
Buffalo, N. Y.	803	1,181	731	1,086	292	883	279
Chicago, Ill.	482	1,188	355	833	713	432	666
Cleveland, Ohio	630	1,087	630	924	405	739	360
Dallas, Tex.	420	1,111	862	443	1,374	586	1,299
Denver, Colo.	879	1,726	700	1,082	1,631	488	1,579
Detroit, Mich.	623	1,152	543	939	482	669	443
El Paso, Tex.	976	1,643	1,157	983	1,905	878	1,836
Houston, Tex.	484	968	1,056	318	1,420	794	1,341
Indianapolis, Ind.	384	1,024	511	712	646	525	585
Kansas City, Mo.	369	1,241	413	680	1,097	166	1,038
Los Angeles, Calif.	1,603	2,339	1,524	1,673	2,451	1,315	2,394
Louisville, Ky.	320	919	605	623	652	580	582
Memphis, Tenn. ....	.....	872	699	358	957	529	881
Miami, Fla.	872	.....	1,511	669	1,092	1,397	1,019
Minneapolis, Minn.	699	1,511	.....	1,051	1,018	290	985
New Orleans, La.	358	669	1,051	.....	1,171	847	1,089
New York, N. Y.	957	1,092	1,018	1,171	.....	1,144	83
Omaha, Nebr.	529	1,397	290	847	1,144	.....	1,094
Philadelphia, Pa.	881	1,019	985	1,089	83	1,094	.....
Phoenix, Ariz.	1,263	1,982	1,280	1,316	2,145	1,036	2,083
Pittsburgh, Pa.	660	1,010	743	919	317	836	259
St. Louis, Mo.	240	1,061	466	598	875	354	811
Salt Lake City, Utah	1,250	2,089	987	1,434	1,972	833	1,925
San Francisco, Calif.	1,802	2,594	1,584	1,926	2,571	1,429	2,523
Seattle, Wash.	1,867	2,734	1,395	2,101	2,408	1,369	2,380
Washington, D. C.	765	923	934	966	205	1,014	123

Cities	Phoenix	Pittsburgh	St. Louis	Salt Lake City	San Francisco	Seattle	Washington
Birmingham, Ala.	1,456	608	400	1,466	2,013	2,082	661
Boston, Mass.	2,300	483	1,038	2,099	2,699	2,493	393
Buffalo, N. Y.	1,906	178	662	1,699	2,300	2,117	292
Chicago, Ill.	1,453	410	262	1,260	1,858	1,737	597
Cleveland, Ohio	1,749	115	492	1,568	2,166	2,026	306
Dallas, Tex.	887	1,070	547	999	1,483	1,681	1,185
Denver, Colo.	586	1,320	796	371	949	1,021	1,494
Detroit, Mich.	1,690	205	455	1,492	2,091	1,938	396
El Paso, Tex.	346	1,590	1,034	689	995	1,376	1,728
Houston, Tex.	1,017	1,137	679	1,200	1,645	1,891	1,220
Indianapolis, Ind.	1,499	330	231	1,356	1,949	1,872	494
Kansas City, Mo.	1,049	781	238	925	1,506	1,506	945
Los Angeles, Calif.	357	2,136	1,589	579	347	959	2,300
Louisville, Ky.	1,508	344	242	1,402	1,986	1,943	476
Memphis, Tenn.	1,263	660	240	1,250	1,802	1,867	765
Miami, Fla.	1,982	1,010	1,061	2,089	2,594	2,734	923
Minneapolis, Minn.	1,280	743	466	987	1,584	1,395	934
New Orleans, La.	1,316	919	598	1,434	1,926	2,101	966
New York, N. Y.	2,145	317	875	1,972	2,571	2,408	205
Omaha, Nebr.	1,036	836	354	833	1,429	1,369	1,014
Philadelphia, Pa.	2,083	259	811	1,925	2,523	2,380	123
Phoenix, Ariz. ....	.....	1,828	1,272	504	653	1,114	1,983
Pittsburgh, Pa.	1,828	.....	559	1,668	2,264	2,138	192
St. Louis, Mo.	1,272	559	.....	1,162	1,744	1,724	712
Salt Lake City, Utah	504	1,668	1,162	.....	600	701	1,848
San Francisco, Calif.	653	2,264	1,744	600	.....	678	2,442
Seattle, Wash.	1,114	2,138	1,724	701	678	.....	2,329
Washington, D. C.	1,983	192	712	1,848	2,442	2,329	.....

Air Distances Between World Cities

Source: *Encyclopaedia Britannica.*

Cities	Berlin	Buenos Aires	Cairo	Calcutta	Capetown	Caracas	Chicago
Berlin, Germany		7,402	1,795	4,368	5,981	5,247	4,405
Buenos Aires, Argentina	7,402		7,345	10,265	4,269	3,168	5,598
Cairo, Egypt	1,795	7,345		3,539	4,500	6,338	6,129
Calcutta, India	4,368	10,265	3,539		6,024	9,605	7,980
Capetown, South Africa	5,981	4,269	4,500	6,024		6,365	8,494
Caracas, Venezuela	5,247	3,168	6,338	9,605	6,365		2,501
Chicago, Ill., U. S.	4,405	5,598	6,129	7,980	8,494	2,501	
Hong Kong (Victoria)	5,440	11,472	5,061	1,648	7,375	10,167	7,793
Honolulu, Hawaii	7,309	7,561	8,838	7,047	11,534	6,013	4,250
Istanbul, Turkey	1,078	7,611	768	3,638	5,154	6,048	5,477
Lisbon, Portugal	1,436	5,956	2,363	5,638	5,325	4,041	3,990
London, England	579	6,916	2,181	4,947	6,012	4,660	3,950
Los Angeles, Calif., U. S.	5,724	6,170	7,520	8,090	9,992	3,632	1,745
Manila, Philippines	6,132	11,051	5,704	2,203	7,486	10,620	8,143
Mexico City, Mexico	6,047	4,592	7,688	9,492	8,517	2,232	1,691
Montreal, Canada	3,729	5,615	5,414	7,607	7,931	2,449	744
Moscow, U.S.S.R.	1,004	8,376	1,803	3,321	6,300	6,173	4,974
New Orleans, La., U. S.	5,173	4,858	6,816	8,869	8,300	1,968	833
New York, N. Y., U. S.	3,965	5,297	5,602	7,918	7,764	2,132	713
Paris, France	545	6,870	1,995	4,883	5,807	4,736	4,134
Rio de Janeiro, Brazil	6,220	1,200	6,146	9,377	3,773	2,810	5,296
San Francisco, Calif., U. S.	5,661	6,467	7,364	7,814	10,247	3,904	1,858
Shanghai, China	5,218	12,201	5,183	2,117	8,061	9,501	7,061
Stockholm, Sweden	504	7,808	2,111	4,195	6,444	5,420	4,278
Sydney, Australia	10,008	7,330	8,952	5,685	6,843	9,513	9,272
Tokyo, Japan	5,540	11,408	5,935	3,194	9,156	8,799	6,299
Warsaw, Poland	320	7,662	1,630	4,048	5,958	5,517	4,667
Washington, D. C., U. S.	4,169	5,218	5,800	8,084	7,901	2,059	597

Cities	Hong Kong	Honolulu	Istanbul	Lisbon	London	Los Angeles	Manila
Berlin, Germany	5,440	7,309	1,078	1,436	579	5,724	6,132
Buenos Aires, Argentina	11,472	7,561	7,611	5,956	6,916	6,170	11,051
Cairo, Egypt	5,061	8,838	768	2,363	2,181	7,520	5,704
Calcutta, India	1,648	7,047	3,638	5,638	4,947	8,090	2,203
Capetown, South Africa	7,375	11,534	5,154	5,375	6,012	9,992	7,486
Caracas, Venezuela	10,167	6,013	6,048	4,041	4,660	3,632	10,620
Chicago, Ill., U. S.	7,793	4,250	5,477	3,990	3,950	1,745	8,143
Hong Kong (Victoria)		5,549	4,984	6,853	5,982	7,195	693
Honolulu, Hawaii	5,549		8,109	7,820	7,228	2,574	5,299
Istanbul, Turkey	4,984	8,109		2,012	1,552	6,783	5,664
Lisbon, Portugal	6,853	7,820	2,012		985	5,621	7,546
London, England	5,982	7,228	1,552	985		5,382	6,672
Los Angeles, Calif., U. S.	7,195	2,574	6,783	5,621	5,382		7,261
Manila, Philippines	693	5,299	5,664	7,546	6,872	7,261	
Mexico City, Mexico	8,782	3,779	7,110	5,390	5,550	1,546	8,835
Montreal, Canada	7,729	4,910	4,789	3,246	3,282	2,427	8,186
Moscow, U.S.S.R.	4,439	7,037	1,091	2,427	1,555	6,003	5,131
New Orleans, La., U. S.	8,540	4,216	6,225	4,541	4,674	1,673	8,778
New York, N. Y., U. S.	8,054	4,964	4,975	3,364	3,458	2,451	8,498
Paris, France	5,985	7,438	1,400	904	213	5,588	6,677
Rio de Janeiro, Brazil	11,021	8,285	6,389	4,796	5,766	6,331	11,259
San Francisco, Calif., U. S.	6,897	2,393	6,703	5,666	5,357	347	6,967
Shanghai, China	764	4,941	4,962	6,654	5,715	6,438	1,150
Stockholm, Sweden	5,113	6,862	1,348	1,856	890	5,454	5,797
Sydney, Australia	4,584	5,073	9,294	11,302	10,564	7,530	3,944
Tokyo, Japan	1,794	3,853	5,560	6,915	5,940	5,433	1,866
Warsaw, Poland	5,144	7,355	863	1,715	899	5,922	5,837
Washington, D. C., U. S.	8,147	4,519	5,215	3,562	3,663	2,300	8,562

Air Distances Between World Cities

Source: Encyclopaedia Britannica.

Cities	Mexico City	Montreal	Moscow	New Orleans	New York	Paris	Rio de Janeiro
Berlin, Germany	6,047	3,729	1,004	5,173	3,965	545	6,220
Buenos Aires, Argentina	4,592	5,615	8,376	4,858	5,297	6,870	1,200
Cairo, Egypt	7,688	5,414	1,803	6,816	5,602	1,995	6,146
Calcutta, India	9,492	7,607	3,321	8,869	7,918	4,883	9,377
Capetown, South Africa	8,517	7,931	6,300	8,300	7,764	5,807	3,773
Caracas, Venezuela	2,232	2,449	6,173	1,968	2,132	4,736	2,810
Chicago, Ill., U. S.	1,691	744	4,974	833	713	4,134	5,296
Hong Kong (Victoria)	8,782	7,729	4,439	8,540	8,054	5,985	11,021
Honolulu, Hawaii	3,779	4,910	7,037	4,216	4,964	7,438	8,285
Istanbul, Turkey	7,110	4,789	1,091	6,225	4,975	1,400	6,389
Lisbon, Portugal	5,390	3,246	2,427	4,541	3,364	904	4,796
London, England	5,550	3,282	1,555	4,674	3,458	213	5,766
Los Angeles, Calif., U. S.	1,546	2,427	6,003	1,673	2,451	5,588	6,331
Manila, Philippines	8,835	8,186	5,131	8,778	8,498	6,677	11,259
Mexico City, Mexico		2,318	6,663	876	2,094	5,716	4,771
Montreal, Canada	2,318		4,386	1,449	320	3,422	5,097
Moscow, U.S.S.R.	6,663	4,386		5,820	4,665	1,544	7,175
New Orleans, La., U. S.	876	1,449	5,820		1,171	4,840	4,743
New York, N. Y., U. S.	2,094	320	4,665	1,171		3,624	4,817
Paris, France	5,716	3,422	1,544	4,840	3,624		5,699
Rio de Janeiro, Brazil	4,771	5,097	7,175	4,743	4,817	5,699	
San Francisco, Calif., U. S.	1,887	2,539	5,871	1,926	2,571	5,558	6,621
Shanghai, China	8,022	7,053	4,235	7,786	7,371	5,754	11,336
Stockholm, Sweden	5,959	3,667	762	5,101	3,924	958	6,651
Sydney, Australia	8,052	9,954	9,012	8,855	9,933	10,544	8,306
Tokyo, Japan	7,021	6,383	4,647	6,912	6,740	6,034	11,533
Warsaw, Poland	6,365	4,009	715	5,249	4,344	849	6,467
Washington, D. C., U. S.	1,887	488	4,858	1,011	205	3,829	4,796

Cities	San Francisco	Shanghai	Stockholm	Sydney	Tokyo	Warsaw	Washington
Berlin, Germany	5,661	5,218	504	10,008	5,540	320	4,169
Buenos Aires, Argentina	6,467	12,201	7,808	7,330	11,408	7,662	5,218
Cairo, Egypt	7,364	5,183	2,111	8,952	5,935	1,630	5,800
Calcutta, India	7,814	2,117	4,195	5,685	3,194	4,048	8,084
Capetown, South Africa	10,247	8,061	6,444	6,843	9,156	5,958	7,901
Caracas, Venezuela	3,904	9,501	5,420	9,513	8,799	5,517	2,059
Chicago, Ill., U. S.	1,858	7,061	4,278	9,272	6,299	4,667	597
Hong Kong (Victoria)	6,897	764	5,113	4,584	1,794	5,144	8,147
Honolulu, Hawaii	2,393	4,941	6,862	5,073	3,853	7,355	4,519
Istanbul, Turkey	6,703	4,962	1,348	9,294	5,560	863	5,215
Lisbon, Portugal	5,666	6,654	1,856	11,302	6,915	1,715	3,562
London, England	5,357	5,715	890	10,564	5,940	899	3,663
Los Angeles, Calif., U. S.	347	6,438	5,454	7,530	5,433	5,922	2,300
Manila, Philippines	6,967	1,150	5,797	3,944	1,866	5,837	8,562
Mexico City, Mexico	1,887	8,022	5,959	8,052	7,021	6,365	1,887
Montreal, Canada	2,539	7,053	3,667	9,954	6,383	4,009	488
Moscow, U.S.S.R.	5,871	4,235	762	9,012	4,647	715	4,858
New Orleans, La., U. S.	1,926	7,786	5,101	8,855	6,912	5,249	1,011
New York, N. Y., U. S.	2,571	7,371	3,924	9,933	6,740	4,344	205
Paris, France	5,558	5,754	958	10,544	6,034	849	3,829
Rio de Janeiro, Brazil	6,621	11,336	6,651	8,306	11,533	6,467	4,796
San Francisco, Calif., U. S.		6,140	5,361	7,416	5,135	5,841	2,442
Shanghai, China	6,140		4,825	4,899	1,097	4,951	7,448
Stockholm, Sweden	5,361	4,825		9,696	5,051	501	4,123
Sydney, Australia	7,416	4,899	9,696		4,866	9,696	9,758
Tokyo, Japan	5,135	1,097	5,051	4,866		5,249	6,772
Warsaw, Poland	5,241	4,951	501	9,696	5,249		4,457
Washington, D. C., U. S.	2,442	7,448	4,123	9,758	6,772	4,457	

The National Park System of the United States

Source: National Park Service.

The National Park System of the United States, administered by the National Park Service, a bureau of the Department of the Interior, embraces a total of 177 areas, containing approximately 22,373,000 acres in federal ownership. Started with the establishment of Yellowstone National Park in 1872, the system includes not only the most extraordinary and spectacular scenic exhibits in the United States proper and in Alaska and Hawaii but also a large number of sites distinguished for their historic or prehistoric importance or scientific interest. The number and extent of the various types of areas which comprise the system, as of December 31, 1956, are as follows:

Type of Area	Number	Federal land (acres)	Lands within exterior boundaries not federally owned (acres)	Total lands within exterior boundaries (acres)
National Parks	29	13,130,737.79	421,769.01	13,552,506.80
National Historical Parks	8	31,976.17	5,447.75	37,423.92
National Monuments	83	8,957,441.08	187,781.44	9,145,222.52
National Military Parks	11	24,542.31	2,342.63	26,884.94
National Memorial Parks	1	68,466.53	1,907.77	70,374.30
National Battlefield Parks	3	5,516.25	2,177.84	7,694.09
National Battlefield Sites	5	188.63	547.35	735.98
National Historic Sites	10	1,354.07	2.12	1,356.19
National Memorials	12	4,426.18	58.13	4,484.31
National Cemeteries	10	215.10	5.00	220.10
National Seashore Recreational Area	1	24,705.23	3,794.77	28,500.00
National Parkways	3	84,554.97	28,228.95	112,783.92
National Capital Parks	1	38,487.69	1,446.30	39,933.99
Total, National Park System	177	22,372,612.00	655,509.06	23,028,121.06

¹ Includes Catotchin Mountain Park, Chesapeake and Ohio Canal, Prince William Forest Park, Baltimore-Washington Parkway, Suitland Parkway among the 792 units administered by National Capital Parks.

National Parks

Name; location and year established as National Park	Area in U. S. ownership, acres	Outstanding characteristics
Acadia (Maine), 1919	30,651.44	Rugged seashore on Mt. Desert Island and adjacent mainland
Big Bend (Texas), 1944	694,224.70	Mountains and desert bordering the Rio Grande
Bryce Canyon (Utah), 1928	36,010.38	Area of grotesque eroded rocks brilliantly colored
Carlsbad Caverns (N. Mex.), 1930	45,846.59	One of the world's largest known caves; spectacular flight of bats.
Crater Lake (Oregon), 1902	160,290.33	Deep blue lake in crater of inactive volcano
Everglades (Florida), 1947	1,258,639.73	Sub-tropical area with abundant bird and animal life
Glacier (Montana), 1910	999,566.80	Rocky mountains with many glaciers and lakes
Grand Canyon (Arizona), 1919	673,108.31	Mile deep gorge, 4 to 18 miles wide, 217 miles long (105 in park).
Grand Teton (Wyoming), 1929	299,935.05	Picturesque range of high mountain peaks
Great Smoky Mts. (N. C.-Tenn.), 1930	507,644.06	Highest mountain range east of Black Hills; luxuriant plant life
Hawaii (Territory Hawaii), 1916	187,480.61	Spectacular volcanic area with two active volcanoes
Hot Springs (Arkansas), 1921	986.11	47 mineral hot springs said to have therapeutic value
Isle Royale (Michigan), 1940	539,338.51	Largest wilderness island in Lake Superior; great moose herd
Kings Canyon (California), 1940	453,718.38	Huge canyons; high mountains; giant sequoias
Lassen Volcanic (California), 1916	104,480.68	Only recently active volcano in United States proper
Mammoth Cave (Kentucky), 1936	50,695.73	Vast limestone labyrinth with underground river
Mesa Verde (Colorado), 1906	51,017.87	Best preserved pre-historic cliff dwellings in United States
Mount McKinley (Alaska), 1917	1,939,319.04	Highest mountain in North America; spectacular wildlife
Mount Rainier (Washington), 1899	241,571.09	Greatest single-peak glacial system in United States
Olympic (Washington), 1938	888,557.79	Finest mountain wilderness of Pacific Northwest
Platt (Oklahoma), 1906	911.97	Cold mineral springs with distinctive properties
Rocky Mountain (Colorado), 1915	255,787.96	Section of the Rocky Mountains; 65 peaks over 10,000 feet
Sequoia (California), 1890	385,258.32	Giant sequoias; Mt. Whitney, highest mountain in U. S. proper
Shenandoah (Virginia), 1935	193,062.74	Tree covered mountains; scenic Skyline Drive
Virgin Islands (U. S. V. Islands), 1956	5,086.41	Beaches, lush hills, historic relics on Island of St. John
Wind Cave (South Dakota), 1903	27,892.66	Limestone caverns in Black Hills; buffalo herd
Yellowstone (Wyoming-Montana-Idaho), 1872	2,213,206.55	World's greatest geyser area; spectacular falls and canyon; one of world's great wildlife sanctuaries
Yosemite (California), 1890	757,990.82	Mountains; inspiring gorges and waterfalls; giant sequoias
Zion (Utah), 1919	128,457.16	Multicolored gorge in heart of southern Utah desert

National Historical Parks

Name and location	Acreage in U.S. ownership
Abraham Lincoln (Kentucky)	116.50
Appomattox Court House (Va.)	968.25
Chalmette (Louisiana)	69.61
Colonial (Virginia)	7,275.80
Cumberland Gap (Ky.-Tenn.-Va.)	20,184.20
Independence (Pennsylvania)	17.50
Morristown (New Jersey)	957.96
Saratoga (New York)	2,386.35

National Monuments

Ackia Battleground (Miss.)	49.15
Andrew Johnson (Tennessee)	16.33
Arches (Utah)	34,249.94
Aztec Ruins (New Mexico)	27.14
Badlands (South Dakota)	104,206.19
Bandelier (New Mexico)	27,048.89
Big Hole Battlefield (Montana)	200.00
Black Canyon of the Gunnison (Colorado)	13,176.02
Cabrillo (California)	.50
Canyon de Chelly (Arizona)	83,840.00
Capitol Reef (Utah)	33,970.61
Capulin Mountain (N. Mex.)	680.42
Casa Grande (Arizona)	472.50
Castillo de San Marcos (Fla.)	18.51
Castle Clinton (New York)	1.00
Cedar Breaks (Utah)	6,172.20
Chaco Canyon (New Mexico)	20,989.35
Channel Islands (California)	26,819.26
Chiricahua (Arizona)	10,480.90
Colorado (Colorado)	17,606.76
Craters of the Moon (Idaho)	48,003.86
Custer Battlefield (Montana)	765.34
Death Valley (Calif.-Nev.)	1,865,538.42
Devils Postpile (California)	798.46
Devils Tower (Wyoming)	1,266.91
Dinosaur (Utah-Colorado)	190,962.13
Edison Laboratory (New Jersey)	1.51
Effigy Mounds (Iowa)	1,204.36
El Morro (New Mexico)	880.80
Fort Frederica (Georgia)	94.40
Fort Jefferson (Florida)	47,125.00
Fort Laramie (Wyoming)	214.41
Fort Matanzas (Florida)	227.76
Fort McHenry (Maryland)	43.26
Fort Pulaski (Georgia)	5,361.62
Fort Sumter (South Carolina)	2.40
Fort Union (New Mexico)	720.60
Fort Vancouver (Wash.)	59.91
Fossil Cycad (South Dakota)	320.00
George Washington Birthplace (Virginia)	393.68
George Washington Carver (Missouri)	210.00
Gila Cliff Dwellings (N. Mex.)	160.00
Glacier Bay (Alaska)	2,274,248.44
Gran Quivira (New Mexico)	450.94
Grand Canyon (Arizona)	193,040.00
Great Sand Dunes (Colorado)	30,609.16
Harpers Ferry (W. Va.-Md.)	469.23
Homestead (Nebraska)	162.73
Hovenweep (Utah-Colorado)	505.43
Jewel Cave (South Dakota)	1,274.56

Name and location	Acreage in U.S. ownership
Joshua Tree (California)	490,599.13
Katmai (Alaska)	2,697,590.00
Lava Beds (California)	46,238.69
Lehman Caves (Nevada)	640.00
Meriwether Lewis (Tennessee)	300.00
Montezuma Castle (Arizona)	783.09
Mound City Group (Ohio)	67.50
Muir Woods (California)	485.13
Natural Bridges (Utah)	2,649.70
Navajo (Arizona)	360.00
Ocmulgee (Georgia)	683.42
Oregon Caves (Oregon)	480.00
Organ Pipe Cactus (Arizona)	328,174.90
Perry's Victory (Ohio)	14.25
Petrified Forest (Arizona)	85,943.63
Pinnacles (California)	12,817.77
Pipe Spring (Arizona)	40.00
Pipestone (Minnesota)	115.60
Rainbow Bridge (Utah)	160.00
Saguaro (Arizona)	60,907.60
Scotts Bluff (Nebraska)	2,171.35
Sitka (Alaska)	54.04
Statue of Liberty (New York)	10.38
Sunset Crater (Arizona)	3,040.00
Timpanogos Cave (Utah)	250.00
Tonto (Arizona)	1,120.00
Tumacacori (Arizona)	10.00
Tuzigoot (Arizona)	42.67
Walnut Canyon (Arizona)	1,641.62
White Sands (New Mexico)	140,247.04
Whitman (Washington)	45.84
Wupatki (Arizona)	34,607.03
Yucca House (Colorado)	9.60

National Military Parks

Chickamauga and Chattanooga (Georgia-Tennessee)	8,189.64
Fort Donelson (Tennessee)	102.54
Fredericksburg and Spotsylvania (Virginia)	2,467.23
Gettysburg (Pennsylvania)	2,713.19
Guilford Courthouse (N. C.)	148.83
Kings Mountain (S. C.)	4,012.00
Moore's Creek (North Carolina)	42.23
Petersburg (Virginia)	1,505.55
Shiloh (Tennessee)	3,707.44
Stones River (Tennessee)	323.86
Vicksburg (Mississippi)	1,329.80

National Memorial Park

Theodore Roosevelt (N. Dak.)	68,466.53
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National Battlefield Parks

Kennesaw Mountain (Georgia)	3,094.21
Manassas (Virginia)	1,731.03
Richmond (Virginia)	691.01

National Battlefield Sites

Antietam (Maryland)	183.63
Brices Cross Roads (Mississippi)	1.00
Cowpens (South Carolina)	1.00
Fort Necessity (Pennsylvania)	2.00
Tupelo (Mississippi)	1.00

National Historic Sites

Name and location	Acreage in U. S. ownership
Adams (Massachusetts)	4.77
Fort Raleigh (North Carolina)	18.50
Hampton (Maryland)	45.42
Home of Franklin D. Roosevelt (New York)	93.69
Hopewell Village (Pa.)	848.06
Jefferson National Expansion Memorial (Missouri)	82.58
Old Phila. Custom House (Pa.) . . . . .	.79
Salem Maritime (Massachusetts)	8.61
San Juan (Puerto Rico)	40.00
Vanderbilt Mansion (New York)	211.65

National Memorials

Coronado (Arizona)	2,745.33
Custis-Lee (Virginia)	2.71
DeSoto (Florida)	24.18
Federal Hall (N. Y.) . . . . .	.45
Fort Caroline (Florida)	116.38
House Where Lincoln Died (D. C.) . . . . .	.05
Lincoln Memorial (D. C.) . . . . .	.61
Lincoln Museum (D. C.) . . . . .	.18
Mount Rushmore (S. Dak.)	1,220.32
Thomas Jefferson (D. C.)	1.20
Washington Monument (D. C.) . . . . .	.37
Wright Brothers (N. C.)	314.40

National Cemeteries¹

Name and location	Acreage in U. S. ownership
Antietam (Maryland)	11.36
Battleground (D. C.)	1.03
Fort Donelson (Tennessee)	15.34
Fredericksburg (Virginia)	12.00
Gettysburg (Pennsylvania)	15.55
Poplar Grove (Virginia)	8.72
Shiloh (Tennessee)	10.25
Stones River (Tennessee)	20.09
Vicksburg (Mississippi)	117.85
Yorktown (Virginia)	2.91

National Seashore Recreational Area

Cape Hatteras (North Carolina)	24,705.23
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National Parkways

Blue Ridge (N. C.-Va.)	56,466.10
George Washington Memorial (Va.-Md.)	3,249.71
Natchez Trace (Tenn.-Ala.-Miss.)	24,839.16

National Capital Parks

National Capital Parks (D. C.-Va.-Md.-W. Va.)	38,487.69
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¹ For Arlington National Cemetery see page 412. It is not included here because it is under the jurisdiction of the Department of the Army rather than of the National Park Service.

Museums of the United States

Source: Questionnaires to Museums.

NEW YORK CITY

American Academy of Arts and Letters: 633 W. 155th St., New York 32. Open: wkdys. & Sun. during exhib. 2-5 (closed Mon.). Otherwise by appt. Free.

Painting, sculpture by members of Academy and National Institute of Arts and Letters. Winter Exhibition by candidates for Art Grants. Spring Exhibition by new members and recipients of grants and honors. Hassam Fund purchases.

American Museum of Natural History: Central Park W. at 79th St., New York 24. Open: wkdys. 10-5, Sun. & hldys. 1-5. Free. Covers all branches of natural sciences except systematic botany with exhibits in each field. Hayden Planetarium.

Brooklyn Museum: Eastern Pkwy., Brooklyn 38, N. Y. Open: wkdys. 10-5, Sun. & hldys. 1-5 (closed Xmas). Free.

European and American paintings. Egyptian collection. Art of China, Japan, India, Near East. Exhibits showing Primitive and New World cultures. American rooms. Industrial design laboratory.

Cloisters: Ft. Tryon Pk., New York 34. Open: wkdys. 10-5 (closed Mon.), Sun., hldys. 1-5 (May-Sept., Sun., 1-6). Free. Cloisters, chapel, chapter house reconstructed from parts of old European structures. Frescoes, polychromed statues, stained glass, Gothic tapestries.

Frick Collection: 1 E. 70th St., New York

21. Open: wkdys. 10-5 (closed Mon. & mo. of Aug.), Sun. & hldys. 1-5. Free.

Paintings, prints, drawings of 14th to 19th centuries. Italian Renaissance and French sculpture and furniture. Chinese and French porcelain. Concerts, lectures.

Guggenheim (Solomon R.) Museum, Guggenheim Foundation: 7 E. 72nd St., New York 21.* Open: wkdys. 10-6 (closed Mon.), Sun. 12-6. Free.

Works of leading 20th century European and American painters and sculptors. Free gallery talks.

Hispanic Society of America (Museum & Library): Broadway bet. 155th & 156th Sts., New York 32. Museum open: wkdys. 10-4:30, Sun. 1-5 (closed Mon., July 4, Thns. Day, Xmas). Library open: wkdys. 1-4:30 (closed Sun., Mon., hldys., mo. of Aug.). Free.

Paintings, sculpture, decorative arts, manuscripts and incunabula, representative of Hispanic culture. Works on Hispanic art, history, and published literature of which much is devoted to objects in the collection.

Jewish Museum: 1109 5th Ave., New York 28. Open: Mon.-Thurs. 1-5 (closed Fri., Sat.), Sun. 11-6. Free.

Jewish ceremonial and historical objects. Works of art, past and contemporary. Junior gallery, child's map of Israel.

* Temporary galleries. New building under construction at 88th St. and 5th Ave.

Metropolitan Museum of Art: 5th Ave. at 82nd St., New York 28. Open: wkdys. 10-5, Sun., hldys. 1-5. Free.

Extensive collection of European and American paintings, decorative arts, prints. Egyptian, Asiatic, Classical art. Musical instruments, arms and armor. American period rooms. Costumes and textiles. *See also* Cloisters.

Museum of Modern Art: 11 W. 53rd St., New York 19. Open: wkdys. 11-6, Sun. 1-7. Adm. 60c (children 20c).

Founded 1929 to aid study of modern art and its application to manufacturing and practical life. Constantly changing exhibitions of contemporary painting, sculpture, photography, architecture, industrial design, films.

Museum of the American Indian, Heye Foundation: Broadway at 155th St., New York 32. Open: Tues.-Sat. 2-5 (closed Sun., Mon., hldys, mos. of July & Aug.). Free.

Archaeology and ethnology of Americas from Arctic Circle to Tierra del Fuego.

Museum of the City of New York: 5th Ave. at 104th St., New York 29. Open: wkdys. 10-5 (closed Mon.), Sun., hldys. 1-5, closed Xmas. Free.

History and life of New York City. Period costumes, furniture, miniature scenes, portraits, paintings, prints, manuscripts, theater & music collection, silver, horse car, etc.

National Academy of Design: 1083 5th Ave. (at 90th St.) New York 28. Open: wkdys. & Sun. 1-6 (during exhibitions).

Special annual exhibitions by selected organizations Oct. thru May.

New York Historical Society: Central Park W. at 77th St., New York 24. Museum open: wkdys. & Sun. 1-5, (Sat. 10-5, closed Mon.). Library open: Mon.-Sat., 10-5. (Closed NY Day, July 4, Thnks. Day, Xmas, month of Aug.). Free.

New York city and state historical exhibits. Early American paintings and portraits. Period rooms. Audubon watercolors. John Rogers statuettes. Library of American History.

Roosevelt (Theodore) Museum: 28 E. 20th St., New York 3. Open: wkdys. 10-5 (closed Mon.), Sun. & hldys. 1-5 (closed Thnks. Day, Xmas, NY Day). Free.

Restored birthplace of Roosevelt. Mounted lion shot by him in Africa. Photographs, letters, trophies, personal items.

Whitney Museum of American Art: 22 W. 54th St., New York 19. Open: every day 1-5. Free.

Sculpture, paintings, watercolors, drawings by 20th-century American artists. Exhibitions of contemporary and historical American art.

CHICAGO

Art Institute of Chicago: Michigan Ave. at Adams St., Chicago 3, Ill. Open: wkdys.

9-5, Sun. 12-5. Adm. 25c. (free Wed., Sat., Sun., hldys.).

Paintings, sculpture, prints, drawings. Oriental arts; European, American decorative arts. Thorne Miniature Rooms.

Chicago Academy of Sciences, Museum of Natural History: Lincoln Park—2001 N. Clark St. Open: daily 10-5. Free.

Emphasis on regional natural history. Exhibits of animal and plant life, minerals and fossils of Chicago region. Research collections from N. America.

Chicago Historical Society: N. Clark St. at North Ave., Chicago 14, Ill. Open: wkdys. 9:30-4:30, Sun. 12:30-5:30. Free (Sun., Mem. Day, July 4, Lab. Day 25¢).

Exhibits and period rooms from discovery and exploration of America to present. Special emphasis on history of Chicago. Washington, Lincoln exhibits.

Chicago Natural History Museum (formerly Field Museum): Roosevelt Rd. at Lake Shore Dr., Chicago 5, Ill. Open: wkdys. & Sun.—Nov.—Feb. 9-4; May-Aug. 9-6; Mar., Apr., Sept., Oct. 9-5 (closed Xmas and NY Day). Adm. 25¢. (free Thurs., Sat., Sun.).

Exhibits in anthropology, botany, geology, zoology. Prehistoric skeletons. Dioramas of Stone-Age Europe. Vast Egyptian collection. Model of moon.

Museum of Science and Industry: 57th St. at Lake Michigan, Chicago 37, Ill. Open: fall & winter—wkdys. 9:30-4 (Sat. 9:30-5:30), Sun. & hldys. 9:30-7; spring & summer—wkdys. 9:30-5:30, Sun. & hldys. 9:30-7. Free (small fee to certain exhibits).

"Do it yourself" museum where learning is fun. Operating coal mine, real submarine, giant heart, Paul Bunyan house.

Oriental Institute of the University of Chicago: 1155 E. 58th St., Chicago 37, Ill. Open: wkdys. 10-12, 1-5 (closed Mon.), Sun. 10-5. Free.

Representative collections of ancient Near Eastern objects, including 40-ton human-headed winged bull from Khorsabad, 16-ft. statue of Tutenkhamon from Egypt, gold ornaments, ivories.

Vanderpoel (John H.) Memorial Art Gallery: Longwood Dr. at 96th St., Chicago 43, Ill. Open: wkdys. & Sun. 9-5 (closed hldys.). Free.

Paintings, watercolors, etchings, sculpture contributed by the artists in tribute to Mr. Vanderpoel.

WASHINGTON, D. C.

Corcoran Gallery of Art: 17th St. at New York Ave., N. W., Washington 6, D. C. Open: wkdys. 10-4:30 (closed Mon.; Sat. 9-4:30), Sun. & hldys. 2-5 (closed Xmas, NY Day & July 4). Free.

Specializes in American art, but has notable collection of 17th century Dutch and 19th century French paintings. Persian rugs, Italian majolica, Greek and

Roman antiquities. Barye bronzes. American sculpture. Annual and special exhibitions of U. S. art.

Freer Gallery of Art, Smithsonian Institution: Jefferson Dr. at 12th St., S.W., Washington 25, D. C. Open: daily 9-4:30 (closed Xmas). Free.

Oriental paintings, sculpture, bronzes, pottery, metalwork, manuscripts. Largest extant Whistler collection.

National Air Museum, Smithsonian Institution: The Mall, 10th and Jefferson Dr., Washington 25, D. C. Open: daily 9-4:30 (closed Xmas). Free.

Full-sized aircraft exhibited, including Wright brothers' *Kitty Hawk Flyer*, Lindbergh's *Spirit of St. Louis*, Wiley Post's *Winnie Mae*, *Bell Supersonic X-1*.

National Collection of Fine Arts: Constitution Ave. at 10th St., Washington 25, D. C. Open: daily 9-4:30 (closed Xmas). Free.

Art collections given by Harriet Lane Johnston, Ralph Cross Johnson, William T. Evans, John Gellatly and others. Room devoted to Albert Pinkham Ryder.

National Gallery of Art: Constitution Ave. at 6th St., Washington 25, D. C. Open: wkdys. 10-5, Sun. 2-10 (closed Xmas & N Y Day). Free.

Paintings, sculpture, drawings, prints, decorative arts given by Mellon, Kress, Widener, Rosenwald, Dale, the Booths, the Garbisches and others. Index of American Design.

Smithsonian Institution: on the Mall, Washington 25, D. C. Open: daily 9-4:30 (closed Xmas). Free.

Maintains the following museums and art galleries: Freer Gallery of Art, National Air Museum, National Collection of Fine Arts, National Gallery of Art, U. S. National Museum. See those entries.

United States National Museum, Smithsonian Institution: several buildings on the Mall, Washington 25, D. C. Open: daily 9-4:30 (closed Xmas). Free.

Exhibits in anthropology, zoology, botany, geology, paleontology, engineering, industry, crafts, numismatics, philately, cultural, civil and military history.

PHILADELPHIA

Academy of Natural Sciences of Philadelphia: 19th and the Parkway, Philadelphia 3, Pa. Open: wkdys. 10-5 (summer 10-4), Sun. 1-5. Adm. 50c (children 25c).

Large habitat groups of animals of North America, Africa, Asia. Hall of Earth History, Audubon Bird Hall. Minerals, gems.

Franklin Institute of the State of Pennsylvania for the Promotion of the Mechanic Arts: 20th St. at Benj. Franklin Pkwy., Philadelphia 3, Pa. Open: wkdys. 12-5 (Sat. 10-5, closed Mon.), Sun. 12-5. Adm. 50¢.

Activities grouped into 7 major categories: Benj. Franklin Memorial; monthly

Journal; lectures; library; medal awards; museum of science and industry, including planetarium; research laboratories.

Pennsylvania Academy of the Fine Arts: Broad and Cherry Sts., Philadelphia 2. Open: wkdys. 10-5 (closed Mon., Good Fri., July 4, Thanks. Day, Xmas, NY Day), Sun. & hldys. 1-5. Free.

Permanent collections include American art from 18th century to present. Special exhibitions.

Philadelphia Museum of Art: Parkway at 26th St., Philadelphia 30, Pa. Open: wkdys. & Sun. 9-5 (closed all legal hldys.). Free.

Paintings: old masters, contemporary French, American, Mexican. Prints, decorative arts, period rooms. Oriental arts. Operates Colonial Chain of Houses in Fairmount Park, Rodin Museum and Samuel S. Fleischer Art Memorial.

MUSEUMS IN OTHER CITIES

(Free unless otherwise noted)

Alabama Museum of Natural History: University of Alabama, Tuscaloosa. Open: wkdys. & Sun. 8-5. Free.

All phases of natural history with emphasis on geology.

Atomic Energy, American Museum of: Oak Ridge, Tenn. Open: wkdys. 9:30-5; Sun. 12:30-6:30. Adm. adults, 50c; students, 25c (children under 12 free).

Historical development and peacetime applications of atomic energy shown by progressive demonstrations, exhibits, motion pictures, miniature atomic reactor, Van de Graaff generator, etc.

Baseball Hall of Fame and Museum, Natl.: Main St., Cooperstown, N. Y.

Relics, pictures, documents of baseball history. Bronze plaques of game's immortals. See also Hall of Fame in index.

Berkshire Museum: Pittsfield, Mass. Open: wkdys. 10-5 (closed Mon.), Sun. 2-5.

Painting, sculpture, decorative arts—ancient to modern; galleries of birds, animals, biology. Peary arctic sledge. Original "One Hoss Shay." First Wm. Stanley transformer.

(Boston) Museum of Fine Arts: 465-479 Huntington Ave., Boston 15, Mass. Open: wkdys. 10-5 (closed Mon.), Sun. 1:30-5:30.

European and American paintings. Early American silver, furniture, interiors. Print collection largest in U. S. Noted Asiatic, Egyptian, Classical collections.

Buffalo Fine Arts Academy—Albright Art Gallery: 1285 Elmwood Ave., Buffalo 22, N. Y. Open: Sun. & Mon. 2-6, rest of wk. 10-5 (closed Thanks. Day, Xmas, NY Day). European and American paintings. Egyptian, Greek, Roman, Oriental, Spanish, French & American sculpture.

Buffalo Museum of Science: Humboldt Park, Buffalo, N. Y. Open: wkdys. 10-5 (Sat. 9-5), Sun. & hldys. 1:30-5:30.

Extensive natural history collections. African and South Sea exhibits. Chinese pottery. Babylonian seals. Living museum.

California Academy of Sciences: Golden Gate Park, San Francisco 18. Open: wkdys. & Sun. 10-5.

North American and African habitat groups. Astronomical exhibits, clocks, watches, lamps, minerals, plants. Steinhart Aquarium. Morrison Planetarium. Continuous research program.

California Palace of the Legion of Honor: Lincoln Park, San Francisco. Open: daily 10-5 (hldys. 1-5).

European and American paintings. Rodin sculpture and drawings. Furniture, bronzes, porcelain. Egyptian art.

Carnegie Institute: 4400 Forbes St., Pittsburgh 13, Pa. Open: wkdys. 10-5 (Tues. during winter mos. 10-10), Sun. 2-5.

Department of Fine Arts: European and American paintings, ancient sculpture. Museum: exhibits in history and natural history. Music Hall. Carnegie Library.

Cincinnati Art Museum: Eden Park, Cincinnati 6, Ohio. Open: wkdys. 10-5 (Tues. Oct.-Apr., 10-10), Sun. & hldys. 2-5 (closed Thns. Day & Xmas).

Painting, prints, decorative arts, period rooms, Near & Far Eastern potteries and bronzes. Egyptian, Greco-Roman, Medieval, Oriental sculptures.

Cleveland Museum of Art: Wade Park, Cleveland 6, Ohio.*

Classical and modern art of all nations and ages. Paintings; sculpture, graphic arts, furniture, silver, prints, arms and armor, textiles, Byzantine, Medieval, Early American collections.

Cleveland Museum of Natural History: Wade Park, Cleveland 6, Ohio. Open: wkdys. 9-5 (closed Mon.), Sun 1-5:30.

Natural history exhibits from formation of our solar system to present—animals, plant life, geology. Spitz Planetarium, Hall of Nature.†

Colonial Williamsburg: Williamsburg, Va. Open: daily. Adm. \$3 for block ticket; students and servicemen \$1. Children free.

Restoration of 18th-century capital of Virginia colony: 82 colonial buildings, 413 reconstructed public buildings, etc. 83 acres of gardens. Abby Aldrich Rockefeller Folk Art Collection. Open daily exc. Mon., free.

Colorado Springs Fine Arts Center: 30 W. Dale St., Colorado Springs, Colo. Open: wkdys. 9-5 (closed Mon. from Sept. thru May), Sun. 1:30-5.

Contemporary paintings. Collection of Spanish-American New Mexican Santos. Southwest Indian arts and crafts.

* Closed for construction of new wing until about Feb. 1, 1958.

† Hall of Science & Gallery of Man planned.

Corning Glass Center: Corning, N. Y. Open: wkdys. & Sun. 9:30-5 (closed Mon.). Museum has most comprehensive collection of glass in world; Hall of Science and Industry shows many uses of glass; factory has comfortable gallery where visitors may watch glass being made.

Currier Gallery of Art: 192 Orange St., Manchester, N. H. Open: wkdys. 10-5, Sun. 2-5.

European and American paintings. Prints and drawings. American decorative arts of 18th century, including silver by Coney, Winslow, Hurd, Revere, etc.

Davenport Public Museum: Brady St. at 7th, Davenport, Iowa. Open: wkdys. 9-5 (closed Mon.), Sun., hldys. 2-5.

Science, history, applied art exhibits, including anthropology, ethnology, Oriental and Mediterranean culture.

Denver Art Museum: 5 separate branches. Administration offices: Schleier Gallery, 1343 Acoma St., Denver 4, Colo. Open wkdys. 9-5 (Mon. 2-5, 7-9), Sun. 2-5.

European, American paintings and decorative arts. Oriental, South Sea, African, Latin American, American Indian arts and crafts. Educational division.

Denver Museum of Natural History: City Park, Denver 6. Open: wkdys. 9-5, Sun. 12-5.

Natural history of North and South America, Australia and South Pacific. Habitat groups of mammals and birds. Minerals, fossil mammal and reptile skeletons, New World archaeology.

Detroit Historical Museum: Woodward at Kirby, Detroit 2. Open: wkdys. 1-10 (Sat. 9-6, closed Mon.), Sun. 1-10.

Walk through streets of 1840 & 1880, automobile and industrial exhibits, period rooms, model railroad.

Detroit Institute of Arts: 5200 Woodward Ave., Detroit, Mich. Open: Sept.-June—wkdys. 1-10 (Sat. 9-6, closed Mon.), Sun. 9-6; July & Aug.—wkdys. & Sun. 9-6 (closed Mon.); closed all hldys.

Survey of history as expressed in arts. Paintings, sculpture, furniture, glass, gold work, ivory, graphic arts, textiles, armor. Murals by Diego Rivera. Movies.

Farmers' Museum: Lake Rd., Route 80, Cooperstown, N. Y. Open: May 1-Nov. 1, 9-6 daily. Re-created Village Crossroads, Nov. 1-Apr. 30, 9-5 daily exc. Mon. Adm. \$1 May 1-Nov. 1, 50¢ Nov. 1-Apr. 30 (children 15¢).

Early farm and handicraft tools. School house, country store, smithy, print shop, doctor's and lawyer's offices, pharmacy, tavern, farm unit. Cardiff Giant. Operated by N. Y. State Historical Assn.

Finimore House: Lake Rd., Route 80, Cooperstown, N. Y. Open: May 1-Nov. 1—daily 9-6; Nov. 1-Apr. 30 daily 9-5. Adm. 75¢ (children 15¢).

American portraits, genre paintings. Browere life masks of Founding Fathers. Hamilton-Burr Room. James Fenimore Cooper Collection. Folk art. Library. Operated by N. Y. State Historical Assn.

Florida State Museum: Gainesville, Fla. Open: wkdys. 9:30-5, Sun. & hldys. 1-5. Archaeology, ethnology, ornithology and other phases of natural history. Also history and industry.

Gardner (Isabella Stewart) Museum: 280 The Fenway, Boston 15, Mass. Open: Tues., Thurs., Sat. 10-4, Sun. 2-5, first Thurs. of each mo., 10 A.M.-10 P.M. (closed other days, natl. hldys., and during Aug.).

Renaissance art in building of Venetian palace style. Painting, sculpture, tapestries, furniture.

Heard Museum: 22 E. Monte Vista Rd., Phoenix, Ariz. Open (Nov. 1-May 1): wkdys. 10-5 (closed Mon.), Sun. 1-5.

Prehistoric and historic pottery, blankets, beadwork, carvings, weapons, etc. from various parts of world.

Herron (John) Art Museum: 110 E. 16th St., Indianapolis, Ind. Open: wkdys. 9-5 (closed Mon. & hldys.), Sun. 1-6.

European paintings from Renaissance to present. American paintings of 19th and 20th centuries. Egyptian, Greek, Asiatic sculpture and ceramics, Chinese bronzes, ceramics, jades.

Huntington (Henry E.) Library and Art Gallery: San Marino 9, Calif. Open: wkdys. & Sun. 1-4:30 (closed Mon. and during Oct.).

18th century British paintings. Library of English and American history and literature. Gutenberg Bible. Franklin's autobiography in his handwriting. Botanical garden. Research facilities.

Illinois State Museum: Springfield, Ill. Open: wkdys. 8:30-5, Sun. 2-5.

Natural History and Art. Botanical and ethnological collections.

International Folk Art Museum (Unit of the Museum of N. Mex.): Off Old Pecos Rd., Santa Fe, N. Mex. Open: Mon. 7-9, Tues.-Sat. 10-5, Sun. 1-5.

Collection of folk art from 50 countries. One of two such museums in world. (Other is in Sweden.)

Layton Art Gallery Collection: War Memorial Center, Milwaukee, Wis. Open: wkdys. 9-5, Sun. 2-5.

Exhibitions of selections from permanent collections.

Los Angeles County Museum: Exposition Park, Los Angeles 7, Calif. Open: wkdys. & Sun. 10-5 (closed Mon., Thns. Day, Xmas).

American, European, Eastern art. American Indian exhibits. Habitat groups of African and North American animals. California History Hall. La Brea fossils.

Mint Museum of Art: 501 Hempstead Pl., Charlotte, N. C. Open: wkdys. 10-5 (closed Mon.), Sun. 3-5. Museum closed during July and August.

American and European paintings and prints. Relics of former U. S. branch mint.

Mound State Monument Archaeological Museum: Moundville, Ala. Open: wkdys. & Sun. 8-5. Adm. 50¢ adults, 25¢ children.

Uncovered Indian burials, etc., of Moundville Indians. Operated by Alabama Museum of Natural History.

Mystic Seaport (Marine Historical Association, Inc.): Mystic, Conn. Open: wkdys. & Sun. 9-5 (closed Thns. Day, Xmas.). Adm. \$1.50 (children 25¢).

Reconstructed seaport of Age of Sail. Typical waterfront street. *Charles W. Morgan*, last of wooden whaleships.

Navajo Ceremonial Art, Museum of: Camino Lejo, near old Pecos Rd., Santa Fe, N. Mex. Open: wkdys. 9-12, 1-4:30 (closed Mon.), Sun. 3-5. Adm. 25¢ (free Sun.).

Sand paintings, ceremonial objects, baskets, blankets, silver. Music records of chants. Comparative material from Asia and elsewhere. Library.

Nelson (William Rockhill) Gallery of Art and Atkins Museum of Fine Arts: 4525 Oak, Kansas City 11, Mo. Open: wkdys. 10-5 (Fri. 1-5, closed Mon.), Sun. & hldys. 2-6 (closed NY Day, July 4, Thns. Day, Xmas.). Also open Thurs. eves. 7-10 from Oct. 1-Apr. 30. Adm. 25¢. (free Sat., Sun., hldys., Thurs. eves.).

European paintings from 13th century to present. Paintings and sculpture from Kress Collection. Extensive Chinese collection. Egyptian, Greek, Roman collections. English pottery. Concerts, movies.

New York State Historical Association: Lake Rd., Route 80, Cooperstown, N. Y.

Maintains Farmers' Museum and Fenimore House. See those entries. Also operates museum and library on Moses Circle in village of Ticonderoga.

Newark Museum: 43-49 Washington St., Newark 1, N. J. Open: Oct.-June-wkdys. 12-5:30 (Wed. & Thur. 12-5:30, 7-9:30), Sun. & hldys. 2-6; July-Sept.-wkdys. 12-5, Sun. & most hldys. 2-6.

Collections: American painting, sculpture; Tibetan, Chinese, Japanese arts; decorative arts, ancient glass & ceramics; natural science, ethnology, mechanical models. Planetarium. Junior museum.

Ringling (John & Mable) museums: Sarasota, Fla. Museum of Art, John Ringling Residence, Museum of the Circus open wkdys. 9-4:30, Sun. 12:30-4:30. Closed Xmas and Labor Day. Adm: Art Museum, \$1; Residence, \$1; Circus Museum, 50¢; general admission, \$2.

Collection of old masters and 18th-century theater in Art Museum. Elaborate furnishings in Residence. Illustrative and historical material in Circus Museum.

Rosierucian Egyptian, Oriental Museum: San Jose, Calif. Open: wkdys. 9-12 & 1-5 (Sat. 1-5), Sun. 12-5.

Egyptian and Oriental antiquities. Mum-mies, statuary, jewelry, utensils, cloth-ing. Reproductions of Egyptian rock tomb and temple. Art gallery.

(St. Louis) City Art Museum: Forest Park, St. Louis 5, Mo. Open: wkdys. & Sun. 10-5 (Mon. 2:30-9:30).

Collection covers all fields of fine art: painting, sculpture, graphic art, decorative art, period rooms. Public restaurant.

San Diego, Fine Arts Gallery of: Plaza de Panama, Balboa Park, San Diego, Calif. Open: wkdys. 10-5, Sun. 1-5:30 (closed Mon. & mo. of Sept.).

European, American paintings, 14th century to present, with emphasis on Span-ish, Italian, Flemish and Dutch art. Asiatic arts and prints.

San Diego Museum of Man: California Quadrangle, Balboa Park, San Diego, Calif. Open: wkdys. 10-4:45, Sun. 12-4:45.

Exhibits on Egypt; primitive weapons; Choco, North American, San Diego County Indians; Mayan archaeology.

San Diego Society of Natural History—Natural History Museum: San Diego, Calif. Open: wkdys. & Sun. 10-4:30 (closed Xmas, NY Day).

Mammals, birds, fossils, shells, plants, insects, minerals. Emphasis on South-western U. S., Sonora and Lower California.

San Francisco Museum of Art: War Memorial Bldg., San Francisco, Calif. Open: wkdys. 12-10 (Mon. 12-5), Sun. 1-5.

Contemporary European, American paintings, sculpture, drawings, prints, architecture, photographs, decorative arts, including work by San Francisco artists. 40-50 exhibitions annually.

Southwest Museum, Inc.: Marmion Way at Museum Dr., Highland Pk., Los Angeles 42,

Calif. Open: wkdys. & Sun. 1-5 (closed Mon., & certain hldys.).

American Indian exhibits, ancient and modern. Library, lectures. Casa de Adobe, reproduction of adobe hacienda, located at 4605 N. Figueroa St.; open Wed. & Sun. 2-5 P.M.

Toledo Museum of Art: Monroe at Scott-wood, Toledo 2, Ohio. Open: wkdys. 9-5 (Mon. 1-5), Sun. hldys. 1-5.

Dutch, French, English, American paintings. Old Masters. Prints, manuscripts, sculpture. Ancient, modern glass. Oriental, Egyptian art. Library, concerts. Founded by Edward Drummond Libbey.

Virginia Museum of Fine Arts: Boulevard at Grove Ave., Richmond 20. Open: wkdys. 11-5 (Fri. in winter 2-5, 8-10; closed Mon.), Sun. 2-5. Free Wed., Sat., Sun. (other days 30¢).

European, American, Oriental art; French and American paintings. European tapes-tries; Imperial Russian jewels. Museum theater with annual season of 7 plays.

Wadsworth Atheneum: 25 Atheneum Sq., N., Hartford 3, Conn. Open: wkdys. 12-5 (Sat. 9-5, closed Mon., Gd. Fri., July 4, Labor Day, Thnks. Day, Xmas, NY Day), Sun. 2-5.

European and American paintings and drawings from 1400 to present. Bronzes, porcelain, silver. American period rooms and furniture. Library, concerts, movies.

Walters Art Gallery: Charles and Centre Sts., Baltimore 1, Md. Open: wkdys. 11-5 (July-Aug. 11-4), Sun. & hldys. 2-5 (closed NY Day, July 4, Thnks. Day, Xmas Eve, Xmas).

Art from ancient empires to 19th century Europe. Important collections of Etrus-can art and medieval illuminated books.

Worcester Art Museum: 55 Salisbury St., Worcester 9, Mass. Open: wkdys. 10-5 (Tues. in Nov.-Apr. 10-10), Sun. 2-5, hldys. 2-5 (closed July 4, Thnks. Day, Xmas).

Art from Egyptian to modern times, in-cluding Far East. Emphasis on painting and sculpture. Classes, lectures, concerts, films. Professional art school.

The Great Seal of the United States

On July 4, 1776, the Continental Congress appointed a committee consisting of Benjamin Franklin, John Adams and Thomas Jefferson "to bring in a device for a seal of the United States of America." After many delays, a verbal description of a design by William Barton was finally approved by Congress on June 20, 1782. The seal shows an American bald eagle with a ribbon in its mouth bearing the

device *E pluribus unum* (One out of many). In its talons are the arrows of war and an olive branch of peace.

"In God We Trust"

"In God We Trust" first appeared on U.S. coins after April 22, 1864, when Congress passed an act authorizing the coinage of a 2-cent piece bearing this motto. Thereafter, Congress extended its use to other coins. On July 30, 1956, it became the national motto.

THE RISE OF THE UNITED STATES

by ARTHUR M. SCHLESINGER, SR.

Emeritus Professor of History, Harvard University

1. Under the English Flag

The land now comprehended within the United States once belonged to Spain, France, England, Holland and Sweden. Spain, colonizing from Mexico in the sixteenth and seventeenth centuries, expanded over most of the Gulf Coast, Texas and the border zone westward through California. France, moving down from Canada in the eighteenth century, annexed the Mississippi Valley from the Apalachians to the Rockies. Meanwhile, in the seventeenth century, the English began peopling the Atlantic shore, and finding the Dutch already established in the present New York and the Swedes in Delaware, seized their possessions.

Notwithstanding this varied international background, United States history has been largely the product of influences emanating from the seaboard communities. Unlike the Spanish and French, the English regarded their colonies as genuine extensions of the homeland, and the settlers sowed English customs, institutions and speech so thoroughly that they eventually spread everywhere. True, the transplanted ways underwent modification, but this arose from necessities imposed by a wilderness existence and, as time went on, from a growing sense of self-sufficiency.

Organized settlement began in 1607 at Jamestown, where the first representative assembly was set up in 1619. The Pilgrims followed at Plymouth in 1620, spearheading a much larger migration of Puritans into New England. Later in the century the Quakers occupied a midway region owned by William Penn, making Philadelphia their headquarters and fanning out in every direction. By 1700 all the thirteen colonies existed but the southernmost, Georgia, which came into being in 1733. The settlers crossed the ocean to escape economic, religious and political oppression and to start anew in a land of greater opportunity.

In time, other strains reinforced the original English population: French Huguenots, Scotch Irish, Germans and minor groups, including the Dutch and Swedes already on hand. African slaves, first introduced at Jamestown in 1619, were welcomed in all the colonies, though the economic need for them was greater in the South, and the system took deeper root there than elsewhere. The people in the North engaged mainly in small farming, fishing and commerce, the Southerners largely in plantation production. Everywhere the colonists practiced self-government. When they clashed with the English-appointed governors, the colonists usually

won out by withholding appropriations.

As the population penetrated farther inland, the settlers encountered the French guarding Canada and the eastern fringes of the Mississippi Valley. In a succession of wars (1689-1763), paralleling greater struggles between the parent nations abroad, France was finally ejected from North America and Britain's dominion extended to the Mississippi. Spain fell heir to the country west of the river, though some years later Napoleon was temporarily to reclaim it for France.

2. Birth of the Nation

With the removal of the Gallic menace the colonists felt less dependent upon the mother country militarily, and England's change from her former policy of "salutary neglect" aroused active resentment. A series of revenue measures, starting with the Sugar Act of 1764, provoked meetings of protest, nonimportation pacts and mob demonstrations in America. Colonial home rule was at stake, also freedom of trade, and the provincials appealed to the principle: "No taxation without representation." Parliament's action in 1774 penalizing all Massachusetts for the deed of a few in dumping dutied tea into Boston Harbor led to the first armed clash at Concord and Lexington on April 19, 1775; but a year and more passed before the patriots resolved upon the hazardous step of independence. The famous Declaration of July 4, 1776, penned by Thomas Jefferson for the Second Continental Congress, justified revolution as the only means to guarantee the "unalienable Rights" of "Life, Liberty and the pursuit of Happiness." Under George Washington as commander in chief the fighting shifted from New England into the middle states and then into the south. General Gates's victory at Saratoga on October 17, 1777, brought England's ancient enemy, France, into the war; just four years later the British yielded to the Allies at Yorktown. The Peace Treaty in 1783 recognized the United States as stretching to the Mississippi.

The infant, though born and baptized, had yet to be weaned. The league of states, formed under the Articles of Confederation in 1781, proved too weak either to deal effectively with foreign countries, or to raise necessary funds, or to ensure unrestricted domestic trade. Within the states, however, Revolutionary idealism prompted action to forbid primogeniture and tax-supported religions, and the Northern commonwealths abolished slavery, a prohibition which Congress's Ordinance of 1787 extended to the territory north of the Ohio. Feebleness of government, combined

with social disturbances culminating in Shays's Rebellion in Massachusetts, made sober men tremble for the sanctity of property rights and seemed to cloud the nation's future. The Federal Convention, summoned in 1787, designed a new framework after much wrangling between rival interests and sections.

The Constitution established a government of three separate and co-ordinate departments—legislative, executive and judicial—each endowed with adequate power, and each to serve as a check and balance on the others. Within its own sphere the general government was supreme, and it exerted its will not through state officials, as under the Articles of Confederation, but immediately upon individuals. Direct popular representation was limited to the House of Representatives, the Senate being chosen by the legislatures (a system which lasted till 1913), the President designated by Electors (who in practice, however, quickly lost their deliberative function), and the Supreme Court appointed by the President and Senate for life. Opposed in many states because of its centralizing and undemocratic features, the Constitution eventually won adoption on the assurance that a bill of rights would be added to preclude federal interference with civil liberties such as freedom of speech, the press and religion. The first ten amendments, in 1791, fulfilled the promise.

Perhaps no convention would have ratified the Constitution if it had been realized that an indivisible Union would ensue. The framers, engaged in the practical task of curing the defects of the Confederation government, strewed phrases through the document that had contradictory implications. On the basis of the text it was possible for equally honest men to maintain that the states were more powerful than the nation, or that the nation overtopped the states. At one time or other nearly every legislature, given what it considered sufficient provocation, asserted the right of nullification or secession. Short of such extreme doctrines, controversy began almost immediately over the question of whether the Constitution should be construed broadly to enhance the national authority or narrowly to lessen it.

Under George Washington, President from 1789 to 1797, the new government became a going concern. Congress, guided by Secretary of the Treasury Alexander Hamilton, buttressed the public credit by arranging to pay at par the national debt and the war-incurred state debts and by creating a United States Bank modeled upon the Bank of England. These measures, especially the last, alarmed Jefferson, veteran liberal and Washington's Secretary of State. Fearing that the legislation would build up a dangerous moneyed class, he urged a strict interpretation of the Con-

stitution in opposition to Hamilton's loose-construction views. The French Revolution widened the breach, for the Jeffersonian Democrats applauded as an upsurge of liberty what the Federalists dreaded as an eruption of chaos. But both men, knowing America's defenseless state, backed Washington's decision to maintain neutrality in France's war with England. Returned to power under John Adams, the Federalists in 1798, however, declared naval hostilities against France and passed the Alien and Sedition Acts to muzzle opposition criticism. Though Adams, defying his party, prevented a full-scale war, he lost the election of 1800 to Jefferson. The Federalists never saw office again.

3. Democracy and Nationalism

The farming interest, which Jefferson deemed the bulwark of free government, had steadily increased since the Revolution. As settlers trekked inland, new states joined the original thirteen: Vermont, Kentucky and Tennessee in the 1790's, with Ohio and others shortly to follow. Western pioneer life begot an intense individualism, fostered political and economic democracy, stimulated nationalism. In the South, by contrast, Eli Whitney's invention of the cotton gin in 1793 opened the way for plantation agriculture and Negro slavery to expand westward beyond the Mississippi. The growth of manufacturing in the Northeast introduced a third element into the scene. The rivalries of these sectional forces wove the principal strands of American history until the Civil War. Toward the mid-century the situation was further confused by the spread of manhood suffrage and a sudden mass immigration from Ireland and Germany.

Jefferson inaugurated the "Virginia Dynasty," his eight years giving way to two terms each of James Madison and James Monroe. He performed his greatest service by purchasing Louisiana from Napoleon in 1803, an act which, though violating his constitutional scruples, carried the flag to the Rockies and vastly enlarged the agricultural domain. With France and England again locked in conflict, depredations on American commerce gave constant provocation to war, but the peace-loving Jefferson applied economic sanctions in the form of an embargo keeping merchantmen at home. Such measures failed, however, and under Madison in 1812 Congress, goaded by the Warhawks, mostly Westerners, declared war on England. Unlike France, she had compounded her offenses by impressing American sailors and, moreover, lay exposed to land attack in Canada. But the assaults on Canada miscarried, and Britain's attempts at counter-invasion with veterans freed by Napoleon's defeat in 1814 fared little better. Unhappily, An-

drew Jackson's victory at New Orleans on January 8, 1815, occurred two weeks too late to affect the Peace Treaty of Ghent, which settled none of the prewar disputes.

Nevertheless the war experience greatly accelerated American nationalism. In 1816 Congress enacted the first protective tariff and chartered a new United States Bank on the model of Hamilton's. In 1819 the country acquired the Gulf region from Spain, who chose to sell rather than have it seized. In 1823 the President, prompted by successful revolutions in Latin America, proclaimed the Monroe Doctrine, warning Europe to keep hands off this new area of freedom.

Other events, however, prefigured growing sectional discord. Opposition to admitting Missouri as a slave state was ended in 1820 only by Congress's agreeing that the rest of the Louisiana Purchase north of the parallel marking her southern boundary should be free soil. Successive tariffs alienated Southerners as class legislation discriminating against their welfare. Touted by the astute South Carolinian, John C. Calhoun, they refurbished the doctrine of state rights as defensive armor. John Quincy Adams's administration (1825-1829) did nothing to improve conditions, and the advent of his successor, Jackson, precipitated a crisis.

Old Hickory, as indomitable in peace as in war, acted boldly against divisive tendencies, whether from the slavocracy or the money power. When South Carolina nullified the Tariff of 1832, he prepared for military action, whereupon the state accepted Congress's olive branch of a lower scale of duties. He smote financial privilege by destroying the Second United States Bank, which wielded monopolistic control over the nation's credit facilities. After eight years Jackson's lieutenant, Martin Van Buren, took over, but a business depression following the Panic of 1837 so discredited his administration that in 1840 the Whigs uproariously elected William Henry Harrison in the famous log-cabin campaign. He died after a month in office, however, and the Whigs fared hardly better with his unintended successor, John Tyler, whose strict-constructionist predictions foiled their plan to establish a third national bank.

Within the free states these years witnessed a ceaseless ferment of humanitarian agitation: crusades for public education, temperance, prison reform, labor's rights, women's rights. Humane people, viewing slavery as an anachronism and a sin, formed organizations to urge its abolition. The moderate-minded, content with demanding its exclusion from the territories, founded a series of unsuccessful parties, beginning with the election of 1840. The

South, frightened by these threats to its cherished institution, found little good in any of the movements and regarded the restless North with mounting apprehension.

4. Sectional Conflict

Western expansionist zeal plus the Southern desire for more slave territory elected James K. Polk over his Whig rival, Henry Clay, in 1844. When the outgoing Congress executed the Democratic pledge to annex Texas, Polk proceeded to high-pressure England into partitioning the jointly held Oregon country at the forty-ninth parallel, and in 1846, while that was still under way, contrived a war with Mexico to acquire California and the territory eastward to Texas. American forces quickly overran northern Mexico and California, but a fiercely contested march from Veracruz through the mountains to Mexico City proved necessary before Polk achieved his goal in the Treaty of Guadalupe Hidalgo early in 1848.

The conquests approximately completed the present continental boundaries. The immediate effect, however, was to arouse sectional dissension over the question of slavery in the new Southwest. Zachary Taylor, elected by the Whigs in 1848, died in office after sixteen months, leaving the crisis in the lap of Millard Fillmore. The Compromise of 1850, piloted through Congress by Henry Clay, admitted California as a free state, left slavery in Utah and New Mexico territories to future judicial determination, and disposed of other disputes. But the settlement soon turned into unsettlement, for Fillmore's Democratic successors, Franklin Pierce and James Buchanan, supported pro-Southern policies.

The Kansas-Nebraska Act of 1854, authorizing slavery by "popular sovereignty" in the country just west of Missouri and Iowa, outraged Northerners as a base repudiation of the historic Missouri Compromise. Guerrilla warfare followed in Kansas, while in the free states the old-time antislavery elements joined with dissident Whigs and Democrats to organize the Republican party. The Republicans insisted that slavery be kept out of all federal territories. Angry contests on the floors of Congress operated like a war of nerves, convincing each side that the other was plotting its ruin. John Brown's insane attempt in 1859 to incite a servile insurrection merely poured oil on the flames. When the Republicans in 1860 elected Abraham Lincoln over a divided Democratic opposition, eleven slave states, appealing to state-rights principles, seceded and established the Confederate States of America.

For the hostilities that ensued, the North possessed the long-run advantage

of superior economic resources and man power, but before these could come into play, the South hoped to win by military prowess and perhaps by the intervention of England, which needed Southern cotton. England, however, never went quite so far, and the Southern authorities failed also to reckon with the inspired leadership of President Lincoln, who taught his people that the preservation of the Union involved not only their country's future but the democratic hope everywhere. While the North went about establishing a blockade by sea, the Confederates under Robert E. Lee brilliantly repulsed repeated land attacks on their capital, Richmond, and countered with battles on Northern soil at Antietam in 1862 and Gettysburg in 1863. But in the west they steadily lost ground until the Union forces late in 1864 swept around the southern tip of the mountains into Lee's rear and, by a pincers movement with Ulysses S. Grant before Richmond, brought final defeat the following April. As soon as military fortunes favored, Lincoln under his war powers proclaimed the emancipation of slaves in all unconquered states and districts, and the Thirteenth Amendment in 1865 universalized the decree. America at long last had caught up with the preamble of the Declaration of Independence.

Even prior to his re-election in 1864, Lincoln "with malice toward none" announced a plan to ease the return of the Southern states to their former place in the Union; but before much could be accomplished, his assassination in April, 1865, brought into office Andrew Johnson, who shared his views of reconstruction without his gifts of persuasion. Over Johnson's vetoes the radical Republicans adopted a punitive program. They imposed military rule upon the South, impeached and almost ousted the President, and exacted ratification of the Fourteenth and Fifteenth Amendments before readmitting the last states in 1870. These amendments were designed to make the freedman a full-fledged citizen and voter. Even so, federal bayonets kept Northern-controlled carpet-bag governments in power for several years more.

5. Business and Government

Already the Republicans were changing from a humanitarian party to one of conservative business. The war gave an immense stimulus to economic life, speeding the construction of railways, the exploitation of minerals and other resources, the development of large-scale manufacturing, the accumulation of wealth, and bringing to the fore great captains of industry and finance, who naturally turned for favors to the dominant party. Despite economic depressions after the Panics of 1873 and 1893, this alliance of business and politics

governed the country almost uninterrupted for the rest of the century, putting successively into office Grant (for eight years), Rutherford B. Hayes, James A. Garfield, Chester A. Arthur (for Garfield's unexpired term), Benjamin Harrison and William McKinley (for two terms).

In the Hayes-Tilden election of 1876, however, the Republicans nearly came to grief, partly because of revelations of widespread graft in Grant's second administration, and partly because of disputed electoral returns from the surviving carpetbag states. A special commission, created by Congress, decided for Hayes by a strictly partisan vote. The Democrats actually won eight years later, the voters preferring Grover Cleveland to James G. Blaine, whom they suspected of political corruption. Cleveland, though defeated in 1888, triumphed again in 1892 largely because the Republicans had claimed too much for the beneficence of tariff protection. The Republicans avoided other disasters by harping upon Democratic disloyalty during the Civil War ("waving the bloody shirt") and by catering to the Northern veterans' vote with generous pensions.

Conservative Republicanism met its principal difficulties in Congress, where the Western members, supported usually by Southern Democrats, uneasily resisted capitalistic domination. The Farther West, peopling rapidly after the war, gave a fresh dimension to the nation. Thanks to the attractions of precious minerals, cattle raising and free homesteads, this last frontier yielded steadily to settled communities, and between 1876 and 1896 eight additional states entered the Union. A new sectionalism emerged in politics, for Western needs and aspirations differed at many points from those of the East. The wage earners, too, feared the growing power of Big Business, but despite mounting numbers they lacked political representation and hence concentrated on trade-union methods, forming the American Federation of Labor in 1881. The two depression periods produced violent strikes and upheavals. Labor, however, prevailed upon Congress to place restraints on immigration in order to discourage competition by underpaid workers, especially from Southern and Eastern Europe.

Legislative struggles nearly always pivoted on issues affecting the new industrial order. The problem of greenback inflation, arising from the war, was finally settled to Eastern satisfaction by the Resumption Act of 1875. The drive for higher and yet higher protection succeeded with occasional reverses until the Dingley Tariff in 1897 set a record. Congress under Western pressure took ineffective steps in 1887 and 1890 to regulate railways and business combinations, and it made some early concessions also to the Western de-

mand for free silver. During the Panic of 1893, however, Cleveland induced Congress to stop the inflation; and after the silverites, capturing the Democratic convention in 1896, failed to elect their nominee, William Jennings Bryan, the Republicans reduced silver to a minor coin and committed the country to the gold standard.

Foreign relations reflected similar tendencies, for the expanding industrial system demanded new markets, openings for investment and sources of raw materials. Cleveland withstood imperialistic sentiment, and in 1898 the McKinley administration intervened in the Cuban insurrection under the whip of popular anger at Spanish methods of repression and the explosion of the battleship *Maine* in Havana Harbor. Spain was quickly routed not only in the West Indies but also in her possessions off Asia. Though the "splendid little war" was prompted less by Wall Street than by a superheated sensational press, it bore fruit in the annexation of Puerto Rico, the Philippines and Guam, and brought businessmen further advantages through the quasi protectorate imposed on Cuba (later extended to other Caribbean countries). About the same time Hawaii and American Samoa were acquired, and Secretary of State John Hay's "open door" policy promised a growing trade with China. Theodore Roosevelt, raised to the presidency by McKinley's assassination in September, 1901, further advanced the cause by abetting a revolution against Colombia, thereby assuring the construction of the Panama Canal and much shorter distances within the colonial empire.

In domestic politics, however, Roosevelt aligned himself with the rising sentiment against business-dominated government, preaching with gusto the doctrine of the "square deal," and in his seven years breaking ground for later and more substantial advances. Despite party reactionaries he put teeth into the enforcement of the Antitrust Act of 1890, bullied Congress into tightening control over railroads and industrial monopolies, and initiated measures for conserving the nation's natural resources. William Howard Taft, his choice as successor, quietly pursued similar policies; but Taft's endorsement of the steep Payne-Aldrich Tariff together with other missteps so embittered the reformers that, failing to prevent his renomination in 1912, they organized the Progressive party to run their idol "Teddy" again. The Democrats, facing a divided opposition, elected their candidate, Woodrow Wilson.

Superbly endowed intellectually, and gifted with Jefferson's power to express democratic aspirations, Wilson proceeded with magisterial authority to climax the earlier efforts at reform. The Underwood Tariff enacted the lowest rates since the

Civil War; the Federal Reserve Act superseded an outworn national banking system; and the Clayton Act created the Federal Trade Commission to stop "unfair methods of competition." Two other measures, launched by popular demand during World War I, involved changes in the Constitution. The Eighteenth Amendment in 1920 enacted national prohibition, which ran its stormy course in thirteen years and required the Twenty-first for its undoing. The Nineteenth Amendment (1920) extended to all women the suffrage which in some states they already possessed.

6. World War and After

With America a neutral in 1914 when the European struggle began, the administration's chief energies turned to the protection of maritime rights. Wilson and his countrymen, hating war and traditionally isolationist, only gradually perceived the threat to national security if a militaristic Germany should supplant Britain as mistress of the Atlantic; but Berlin's revival of ruthless submarine operations a few months after Wilson's second election clarified men's minds. Congress, stirred by his appeal that "The world must be made safe for democracy," declared war on April 6, 1917. The government, racing against time, swiftly put the nation on a battle footing, enacting universal conscription, taking over the railways, and regimenting industry, labor and agriculture. It was the country's introduction to total war. In the summer of 1918 Yankee troops under General John J. Pershing helped repulse a great German drive on the Marne and in September shared in the mighty Meuse-Argonne counteroffensive, which ended the struggle on November 11.

At the Paris Peace Conference, Wilson fought stubbornly for the democratic settlement he had earlier outlined under Fourteen Points, but gained principally his proposal of a League of Nations, which he saw as a sort of continuing peace conference. At home the Republican-controlled Senate, whipping up isolationist sentiment, completed his rout, for when Wilson spurned efforts to amend the treaty, that body under the two-thirds requirement rejected it by a minority vote. The tide was turning from wartime idealism to what Warren G. Harding, overwhelmingly elected by the Republicans in 1920, called "normalcy." Disclosures of corruption in high government circles hastened Harding's death, elevating Calvin Coolidge, who renewed his presidency by election a year later and was followed in 1929 by Herbert Hoover. All three, while keeping out of the League, nevertheless co-operated with some of its minor activities and, on their own, concluded a number of collective treaties for temporary naval disarmament and the outlawry of war.

These part-way steps were offset, however, by an upsurge of economic nationalism: a skyward trend of protective duties, a relaxing of controls over giant corporations, and a quota limitation on European immigration. "Rugged individualism" produced the dizziest prosperity the country had ever known, only to collapse in 1929 into the worst depression ever known. Hoover, striving vainly to repair the damage, met abject defeat in 1932 at the hands of the socially minded Franklin D. Roosevelt, who pledged a "new deal" by the Democrats. Under Roosevelt's thrilling leadership Congress, casting precedent to the winds, voted billions for relief, "primed the pump" of business and agriculture to hasten recovery, and inaugurated long-range reforms to increase foreign trade through reciprocal tariff reductions, reorganize banking practices, safeguard trade-union activities, guarantee minimum wages, destroy electrical holding companies, and provide for social insurance and a government-planned development of the Tennessee Valley.

7. World War Again

Toward Latin America Franklin Roosevelt adopted the "good neighbor" policy, relinquishing the Caribbean protectorates and transforming the Monroe Doctrine into a mutual nonaggression pact. As further evidence of the retreat from imperialism, Congress made provision for Philippine freedom in 1946. Relations with other parts of the world, however, posed increasing problems. As the Axis dictators and their Oriental partner, Japan, began overrunning weaker peoples, Congress under isolationist influences directed Roosevelt, against his wish, to embargo munition sales to both victim and assallant; but public opinion forced a lifting of the ban after England and France in September, 1939, took up arms against Nazi aggression. Hitler's subjugation of France the following June emboldened Roosevelt to more active steps, for crippled England now alone defended the Atlantic from totalitarian domination. Congress at his behest voted vast sums for rearmament and adopted peacetime conscription, and Roosevelt, without consulting Congress, gave England fifty destroyers in exchange for a string of naval bases located off North America.

Isolationists, mostly Republicans, denounced Roosevelt's "warmongering," while he, still clinging to measures "short of war," stressed insistently the gathering dangers to the American way of life—to freedom of speech, freedom of worship, freedom from want and freedom from fear. The people responded by choosing Roosevelt in 1940 as their first third-term President. In March 1941, he secured adoption of the lend-lease plan and soon began

using the navy to safeguard the supplies en route.

Before a crisis was reached, the Japanese war lords, irked by America's stiffening attitude toward their own conquests and gambling upon an Axis victory in Europe, treacherously attacked Pearl Harbor on December 7, clearing the way for the seizure of Guam, the Philippines and two of the Aleutians, as well as many Dutch and British holdings. Within four days Germany and Italy declared war against the United States.

America quickly girded herself for the mightiest struggle in history. Enlarging upon Wilson's wartime methods, the government completely reorganized the national economy for an unparalleled output of arms and food. By summer, sea, land and air forces were attacking the enemy all over the globe. In May 1943, after bitter fighting, Anglo-American armies expelled the Axis from North Africa, then invaded southern Italy and forced the government's submission in September, though the Nazis there kept up the fight. Landing in Normandy in June 1944, the Allies under Dwight D. Eisenhower's supreme command battered their way through France and across the Rhine, while the Russians pounded the Nazis from the east. On May 7, 1945, Germany unconditionally surrendered. The Pacific war was no less desperately contested; but the Allies, based on Australia, slowly won control of the sea and, pressing onward from island to island, hastened Japan's unconditional surrender on August 14, 1945, by loosing the atomic bomb and by Soviet Russia's last-minute entry into the conflict.

World War II was at an end, but what would be the nature of the peace? The Atlantic Charter, signed in August, 1941, by Roosevelt and Churchill and later agreed to by all the Allies, pledged them against "aggrandizement, territorial or other," but subsequent conferences by the major powers—at Cairo, Teheran, Yalta, Potsdam and elsewhere—foreshadowed a different outcome. Russia in particular demanded substantial territorial advantages. In July 1946, the Allies gathered at Paris to draw up terms for Italy and the Axis satellites: Rumania, Bulgaria, Hungary and Finland. Germany and Japan, which were under armed occupation, were reserved for later handling.

Without waiting for final military victory, fifty countries, at Roosevelt's initiative and with bipartisan support in America, had set up a successor to the League: the United Nations. Roosevelt, elected a fourth time in 1944, died suddenly on April 12, 1945, several weeks too soon to assist in framing the charter at San Francisco.

Years of Decision: 1945-56

by LOUIS M. HACKER

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1. The Truman Administrations of 1945-53

Truman assumed office on the death of Roosevelt in April 1945. His Fair Deal was a continuation of the New Deal. Part of the program was enacted; part of it failed, notably Truman's request for the repeal of the Taft-Hartley Act of 1947 (which defined unfair trade-union practices). Inflexible price supports for agriculture were established, but agricultural net income from 1951 on declined as a result of contraction in domestic and foreign demand and continuing high productivity.

In foreign affairs, the Administration's program of "containment" resulted in the carrying out of the "Truman Doctrine" (1947) of military and economic aid to Greece and Turkey, then under Soviet pressures; the Marshall Plan (1948) of military and economic assistance to all countries seeking help (such grants and loans came to \$50 billion during 1945-51); and the establishment of the North Atlantic Treaty Organization (1949), largely with American financing. In 1948, the Berlin airlift rescued that city from the Russian blockade; and Administration policy led to the creation of the West German Bonn Government and agreement among the allies to free Bonn from occupation restrictions. In 1949, Truman enunciated his "Point Four" program for technical assistance to economically backward countries.

Korea became the test of Truman foreign policy. In June 1950, North Korean Communist forces crossed the 38° parallel to invade South Korea and, under American leadership, the U.N. Council declared North Korea an aggressor. U.N. forces—largely made up of American troops and headed by Gen. Douglas MacArthur—landed, met initial setbacks, but in September were able to outflank the North Koreans at Inchon and sweep north to the Yalu River (November). At this point, China entered the war (the Administration had been warned this would occur) and from thence on the fortunes of war saw-sawed. In April 1951, MacArthur was relieved (for advocating an attack on Manchuria), and a stalemate set in at the 38° parallel.

2. The Eisenhower Administration 1953-56

Eisenhower accepted the social interests and guarantees of government as regards

the well-being of Americans; to this extent the New Deal was not abandoned. He called for highway construction, slum clearance, expanding social security, and aid for education and medical insurance. But he looked to wider state co-operation in the furtherance of such programs, including power expansion. Like Truman, he was an advocate of civil rights; and the Supreme Court in September 1954 unanimously handed down its celebrated decision for integration of Negroes and whites in the schools of the nation (which the Federal district courts began to enforce).

Eisenhower, however, was committed to economy in government and getting the government out of the economy. Direct controls over prices and wages were removed; efforts were made to assist small business; government activities were curtailed (in power development, control over tidal oil lands); taxes were lightened on individuals and businesses; flexible price supports for agriculture and the establishment of a "soil bank" replaced the rigid price controls; notably monetary and fiscal measures (with the Treasury and the Federal Reserve co-operating) were used in recession (1954) and inflation (1956).

As Americans were taking the initiative of making jobs for one another, per capita disposable income (evidences of mounting prosperity) went up from \$1,547 in 1946 to \$1,629 in 1955 (in dollars of 1955 purchasing power). There were more than 66.8 million in the total civilian labor force at the end of August.

In foreign affairs, the acceptance of the realities of Russian power led to the adoption of the policy of "co-existence." The unhappy war in Korea was ended by a truce in July 1953. Atomic weapons and guided missiles continued to be built, but the plan of "atoms for peace" was launched in 1953; the U. S. talked of disarmament and its willingness to accept international inspection (at Geneva in 1955); it was ready to explore cultural exchanges with Iron Curtain countries. To peace there is "no real alternative," was the Administration's position; it kept its defenses powerful, however, curtailed foreign aid, and relied more upon its own resources and purposes. America kept its allies, but was guided less by their interests and more by its own. International tensions had definitely lessened.

(Recent events are covered in our *Headline History of Our Times* and in the *News Record of 1957*.)

Principal Bills and Treaties Since 1900

PARTY ABBREVIATIONS

Dem.—Democratic
Rep.—RepublicanA.L.—American Labor
F.L.—Farmer-LaborInd.—Independent
Prog.—ProgressiveProh.—Prohibition
Soc.—Socialist

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Hay-Pauncefote Treaty. England agreed the U. S. can build and control an Isthmian canal open to all nations on equal terms (ratified Dec. 16, 1901).		No vote required		72	6	Nov. 18, 1901
Hay-Bunau-Varilla Treaty. Granted the U. S. a ten-mile strip in Panama in perpetuity for \$10,000,000 in gold and an annuity of \$250,000.	Dem. Rep.	No vote required		9 41	15 1	Mar. 19, 1903
Pure Food and Drug Act. Made shipments in interstate commerce of adulterated foods and drugs illegal.		240	17	63	4	June 30, 1906
Immigration Act. Barred paupers, anarchists, criminals and diseased persons.						Mar. 26, 1910
Glass-Owen Bill. Established a Federal Reserve system.		298	60	43	25	Dec. 23, 1913
Federal Trade Commission. Established to enforce anti-trust laws.		No roll-call vote		53	16	Sept. 26, 1914
Clayton Antitrust Act. Prohibited monopolistic price discrimination, restrictive sales or leases, intercorporate stock holding, interlocking directorates of competing companies capitalized at \$1,000,000 or more. Exempted labor from antitrust laws and declared peaceful picketing legal.		244	54	35	24	Oct. 15, 1914
Federal Farm Loan Act. Created system of land banks to lend money to farmers on their land and permanent improvements.		No roll-call vote		58	5	July 17, 1916
Keating-Owen Act. Forbade shipping in interstate commerce of goods produced by children. (Declared unconstitutional in 1918.)		337	46	52	12	Sept. 1, 1916
Adamson Act. Limited working hours of railroad employees to 8 per day on interstate railroads.		259	36	43	28	Sept. 3-5, 1916*
Burnett Immigration Bill. Required literacy test for immigrants.		308	87	64	7	Vetoed, Jan. 29, 1917
		285	106	62	19	Feb. 5, 1917
		(Reconsideration vote)				
Armed Neutrality Act. Allowed American vessels to be armed in war zones.		...	...	Filibustered		Defeated, Mar. 4, 1917
Declaration of War. Against Germany (World War I).		373	50	82	6	Apr. 6, 1917
National Prohibition Act (Volstead Act). Prohibited manufacture, transportation and sale of beverages containing more than .5 per cent alcohol.		321	70	Voice vote approval		Vetoed, Oct. 27, 1919
		176	55	65	20	Oct. 28, 1919
		(Reconsideration vote)				
Treaty of Versailles.	Dem. Rep.	No vote required		4 35	42 13	Defeated, Nov. 19, 1919
Treaty of Versailles.	Dem. Rep.	No vote required		21 28	23 12	Defeated, Mar. 19, 1920
Emergency Quota Act. Limited annual number of immigrants from any country to 3 per cent of that nationality living in U. S. in 1910. (Renewed in 1922 for two more years.)		No record vote		78	1	May 19, 1921
Federal Intermediate Credit Act. Lent money to farmers to extent of 75 per cent of value of harvested crops and livestock.		277	3	No record vote		Mar. 4, 1923

* As Sept. 3 was a Sunday, the bill was re-signed on the following Tuesday.

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Bonus Bill. Provided 20-year endowment policies for veterans.	Dem.	177	20	32	9	Vetoed, May 15, 1924
	Rep.	175	34	33	8	
	F.L.	1	...	2	..	
	Soc.	1	...	..	..
	Ind.	1	...	..	..
		(Reconsideration vote)				May 19, 1924
	Dem.	145	21	27	9	
	Rep.	166	57	30	17	
	F.L.	...	...	2	..
	Soc.	1	...	..	..
	Ind.	1	...	..	..
Immigration Quota Law. Limited annual number of immigrants to 2 per cent of each country's residents in U. S. in 1890. After 1927, the number was to be limited annually to 150,000. Did not apply to nations of Western Hemisphere.		308	58	69	9	May 26, 1924
World Court Membership.	Dem.	No vote required		36	2	Jan. 27, 1926
	Rep.			40	14	
	F.L.			..	1	
Kellogg-Briand Pact. Outlawed wars and prescribed arbitration of international disputes.		No vote required		85	1	Jan. 15, 1929
Agricultural Marketing Act. Created federal farm board with power to lend money to farm co-operatives and to create stabilization corporations to buy farm surplus and to store and sell abroad to maintain prices.	Dem.	121	32	33	2	June 15, 1929
	Rep.	245	2	21	32	
	F.L.	1	...	..	..
Hawley-Smoot Tariff. Very high protective tariff, averaging 40.08 per cent but giving President power to initiate reduction or increase in rates.	Dem.	14	132	5	30	June 17, 1930
	Rep.	208	20	39	11	
	F.L.	...	1	..	1	
War Debt Moratorium. Provided for moratorium on payment of interest and war debt installments by nations indebted to U. S.	Dem.	120	95	33	6	Dec. 23, 1931
	Rep.	196	5	36	6	
	F.L.	1	...	..	..
Reconstruction Finance Corporation. Established with a working fund of \$500,000,000 and power to borrow more to release frozen assets in banks and mortgage companies and to help bankrupt railroads.	Dem.	153	43	29	5	Jan. 22, 1932
	Rep.	182	12	34	3	
Norris-LaGuardia Act. Limited granting of injunctions against labor; required open testimony in open court and outlawed yellow dog contracts.		363	13	75	5	Mar. 23, 1932
3.2 Percent Liquor Law. Legalized manufacture and sale of 3.2 wines and beers.	Dem. Rep.	No record vote		33 10	19 17	Mar. 22, 1933
Civilian Conservation Corps. Created to relieve unemployment and to work at reforestation, road building and flood control.		No roll-call vote		No roll-call vote		Mar. 31, 1933
Agricultural Adjustment Act. Created the AAA, which was authorized to limit acreage on specified crops at farmers' option and to pay benefits to farmers; money for this purpose to be raised by a process tax, which was declared unconstitutional Jan. 16, 1936.		315	98	52	31	May 12, 1933
Tennessee Valley Authority. Established to develop and sell electric power, to serve as yardstick for electricity rates, to develop rural electrification, to establish flood control, and to produce fertilizer.	Dem.	284	2	48	3	May 18, 1933
	Rep.	17	89	14	17	
	F.L.	5	...	1	..	
Federal Securities Act. Required that all stock and bond issues be registered and approved.		No roll-call vote		No roll-call vote		May 27, 1933
Home Owners Refinancing Act. Established the HOLC, which took over mortgages in exchange for bonds in order to save home owners from losing homes.		383	4	No record vote		June 13, 1933
Glass-Steagall Banking Act. Created Federal Deposit Insurance Corporation to insure deposits up to \$5000; required that private banks be either investment or deposit banks, but not both.		No record vote		No roll-call vote		June 16, 1933

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
National Industrial Recovery Act. Created NRA; authorized establishment of trade associations; suspended antitrust laws; authorized drawing-up of codes of Fair Competition to be accepted by President; guaranteed collective bargaining and required employers to accept approved maximum and minimum wage provisions. (Declared unconstitutional in 1935.)	Dem. Rep. F.L.	266 53 4	25 50 ...	46 10 1	4 20 ..	June 16, 1933
Gold Reserve Act. Gave President power to devalue gold and to impound for treasury all gold in Federal System and to establish Exchange Stabilization Fund.	Dem. Rep. F.L.	287 68 5	2 38 ...	55 10 1	1 22 ..	Jan. 30, 1934
Farm Mortgage Refinancing Act. Created Federal Farm Mortgage Corporation to assist farmers in payment of mortgages on easier interest terms.		No record vote		No record vote		Jan. 31, 1934
Tydings-McDuffie Act. Gave the Philippine Islands independence.	Dem. Rep. F.L.	No roll-call vote		51 16 1	.. 8 ..	Mar. 24, 1934
Securities and Exchange Act. Established Securities and Exchange Commission; required licensing of stock exchanges; made certain speculative practices illegal; gave Federal Reserve Board power to fix margins; required full financial statements from registered companies.	Dem. Rep. F.L.	254 22 4	11 73 ...	47 15 ..	1 12 ..	June 6, 1934
Trade Agreements Act. Authorized President to reduce tariffs by as much as 50 per cent of prevailing rates for those countries which granted the U. S. most favored nation treatment without the need for Senatorial ratification for three years.	Dem. Rep. F.L.	No record vote		51 5 1	5 28 ..	June 12, 1934
National Housing Act. Created Federal Housing Administration to administer funds for modernizing homes and for lending for new construction.		176	19	No record vote		June 28, 1934
Federal Farm Bankruptcy Act (Frazier-Lemke Act). Declared moratorium on farm mortgage foreclosures. (Declared unconstitutional in May, 1935.)		No record vote		60	16	June 28, 1934
World Court Ratification. (Defeated in Senate by lack of 2/3 majority vote.)	Dem. Rep. F.L. Prog.	No vote required		43 9	20 14 1 1	Defeated, Jan. 29, 1935
National Labor Relations Act (Wagner-Connery Act). Created the NLRB with power to determine appropriate collective bargaining unit subject to elections they supervised at request of the workers; to certify the duly chosen trade union and to take testimony about unfair employer practices and issue cease and desist orders.	Dem. Rep. F.L. Prog.	No record vote		49 12 1 1	4 8	July 5, 1935
Social Security Act. Created social security board to administer old age benefits based on earnings before the age of 65; unemployment administered under state laws and grants to states to aid the needy aged, blind, orphans, widows, etc.		372	33	76	6	Aug. 14, 1935
Banking Act of 1935. Increased power of Federal Reserve Board of Governors over open market and credit transactions.		No record vote		No record vote		Aug. 23, 1935
Public Utilities Act (Wheeler-Rayburn Act). Required all public utilities to register with the SEC and limited utility holding corporations to first degree unless necessity required greater complexity.	Dem. Rep. F.L. Prog.	203 7 3 6	59 83	No record vote		Aug. 26, 1935
Farm Mortgage Moratorium Act. Allowed three-year moratorium on foreclosures with court permission upon payment of reasonable rental.		No record vote		No record vote		Aug. 29, 1935
Neutrality Act. Allowed President, for 6 months, to prohibit exports of arms, etc. (or their transportation by U. S. vessels) to belligerent countries.		211	83	79	2	Aug. 31, 1935

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Soldiers' Bonus Bill. Made 9-year 3-per cent bonds redeemable on demand.	Dem.	265	29	56	9	Vetoed, Jan. 24, 1936
	Rep.	72	30	15	7	
	F.L.	3	...	2	..	
	Prog.	6	...	1	..	(Reconsideration vote)
	Dem.	248	32	57	12	
	Rep.	66	29	16	7	
Soil Conservation and Domestic Allotment Act. Granted payments to farmers who let their land lie fallow or planted cover crops.	F.L.	3	...	2	..	
	Prog.	7	...	1	..	
	Dem.	246	25	49	9	Mar. 2, 1936
	Rep.	20	64	5	11	
Reciprocal Trade Agreement Act. Extended to June, 1940, period during which President is authorized to negotiate foreign trade under Trade Agreements Act of 1934.	F.L.	1	1	1	..	
	Prog.	...	7	1	..	Mar. 1, 1937
		284	0	58	24	
Neutrality Act. Forbade export of arms and ammunition to belligerents, the sale in this country of belligerents' securities, the use of American ships for carrying munitions; required belligerents to pay upon purchase and carry all purchases in their own ships (cash and carry clause).		377	12	41	15	May 1, 1937
Judiciary Act. Allowed voluntary retirement of Supreme Court justices and other federal court judges on full pension at age of 70.		No roll-call vote		Unanimous, no roll-call vote		Aug. 25, 1937
National Housing Act. Established the U. S. Housing Authority to administer loans to local communities and states for rural and urban construction. (Amended in 1938.)		275	86	64	16	Sept. 1, 1937
Agricultural Adjustment Act. Continued soil conservation program; provided parity payments and commodity loans to farmers; established crop insurance corporations and ever-normal granary plan.	Dem.	243	54	53	17	Feb. 16, 1938
	Rep.	14	74	2	11	
	F.L.	5	...	..	2
	Prog.	1	7	..	1	
	Ind.	...	...	1	..
Wage and Hours Act. Provided minimum wage of 25 cents to rise to 40 cents after 6 years; limited hours from 44 per week the first year to 40 after the third year; goods produced by "oppressive child labor" could not be shipped in interstate commerce.	Dem.	247	41	No record vote		June 25, 1938
	Rep.	31	48			
	F.L.	5	...			
	Prog.	7	...			
Allen Registration Act (Smith Act). Required fingerprinting of all aliens in U. S.; made it unlawful for anyone to advocate or teach overthrow of U. S. government or to belong to any group advocating such.		382	4	No record vote		June 28, 1940
Selective Service Act. Established system for compulsory service in armed forces. (Extended in 1941.)	Dem.	211	33	50	17	Sept. 16, 1940
	Rep.	52	112	8	10	
	F.L.	...	1	..	2	
	Prog.	...	2	..	1	
	Ind.	...	...	..	1
	A.L.	...	1	..	..
Lend-Lease. Provided system whereby U. S. lent goods and munitions to democratic nations in return for services and goods.		260	165	60	31	Mar. 11, 1941
Selective Service Act Extension. Extended period of service to not more than 30 months in time of peace and eliminated 900,000-man limit of Army.	Dem.	182	65	38	16	Aug. 18, 1941
	Rep.	21	133	7	13	
	Prog.	...	3	..	1	
	A.L.	...	1	..	..
Declarations of World War II: Against Japan.	Dem.	235	...	56	...	Dec. 8, 1941
	Rep.	149	1	24	..	
	Prog.	3	...	1	..	
	Ind.	...	...	1	..
	A.L.	1	...	..	..
Against Germany.		393	0	88	0	Dec. 11, 1941

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
U. N. Charter ratification. (For full text of Charter, see index.)	Dem. Rep. Prog.	No vote required		53 35 1	.. 2 ..	July 28, 1945
Case Bill. Would have set up mediation board, established enforceable 30-day cooling-off periods in labor disputes, outlawed boycotts and sympathy strikes, and authorized court injunctions.	Dem. Rep. Prog. A.L.	97 133	91 13 1 1	33 28	13 6 1 ..	Vetoed, June 11, 1946
(Defeated in House by lack of 2/3 majority to override veto.)		(Reconsideration vote)				
	Dem. Rep. Prog. A.L.	96 159	118 15 1 1	.. .. .. ..	.. .. .. ..	Defeated, June 11, 1946
British Loan Act. Established \$3,750,000,000 credit to Britain, including \$650,000,000 in lend-lease.	Dem. Rep. Prog. A.L.	157 61 .. 1	32 122 1 ..	29 17	15 18 1 ..	July 15, 1946
Atomic Energy Commission. Created five-man controlled commission without military representation but with military liaison; permitted Army and Navy to make atomic weapons; forbade distribution of fissionable materials or atomic energy information.		No record vote		No record vote		Aug. 1, 1946
Greek-Turkey Aid Bill. Authorized \$400,000,000 to furnish aid to Greece and Turkey upon application, subject to withdrawal upon request of countries, of the U. N. Security Council or General Assembly, or of President if improperly used or unnecessary.	Dem. Rep. A.L.	160 127 ..	13 93 1	32 35 ..	7 16 ..	May 22, 1947
Treaty Ratifications: With Italy.	Dem. Rep.	No vote required		37 42	3 7	June 14, 1947
With Rumania.		No vote required		Voice vote approval		June 14, 1947
With Bulgaria.		No vote required		Voice vote approval		June 14, 1947
With Hungary.		No vote required		Voice vote approval		June 14, 1947
Taft-Hartley Bill (Labor-Management Relations Act, 1947). Prohibits closed shops but allows union shops by secret vote of majority of employees; makes unions subject to damage suits for unfair labor practices, such as boycotts or jurisdictional strikes; requires unions to file financial reports; requires union leaders to file statements that they are not Communistic.	Dem. Rep. A.L. Dem. Rep. A.L.	103 217 .. 106 225 ..	66 12 1 71 11 1	17 37 .. 20 48 ..	15 2 .. 22 3 ..	Vetoed, June 20, 1947 June 23, 1947
Presidential Succession Act. Made Speaker of House and President of Senate pro tempore next in line after Vice President.		365	11	50	35	July 18, 1947
National Security Act of 1947. Reorganized and co-ordinated armed forces under National Military Establishment headed by Secretary of Defense (of Cabinet rank) and including Secretaries of the Army, the Navy and the Air Force.		Voice vote approval		Voice vote approval		July 26, 1947
Foreign Assistance Act of 1948. Authorized \$5.3 billion 1-year European Recovery Program, \$275 million for military aid to Greece and Turkey, \$463 million in economic and military aid for China, \$60 million for U. N. Fund for Children.	Dem. Rep. A.L.	150 167 0	11 62 2	Voice vote approval		Apr. 3, 1948
Selective Service Act. Provided for registration of all men 18-25 and induction of enough men 19-25 to maintain Army of 837,000, Navy and Marine Corps of 666,882, and Air Force of 502,000.		259	136	Voice vote approval		June 24, 1948
Displaced Persons Bill. Admitted 205,000 European displaced persons, including 3,000 orphans.		Voice vote approval		Voice vote approval		June 25, 1948
Foreign Aid Appropriations. Appropriated funds for 1 year: \$5.055 billion for ERP, \$400 million for China, \$1.3 billion for occupied areas, \$225 million for Greece and Turkey, \$35 million for U. N. Fund for Children, \$70,710,228 for IRO.		..	62	Voice vote approval		June 28, 1948

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Housing Bill. Authorized Federal loans for private construction of low-cost homes and apartments; liberalized loans to manufacturers of prefabricated houses.		351	9	Voice vote approval		Aug. 10, 1948
Bill to raise salaries: President's, \$75,000 to \$100,000 with new \$50,000 tax-free allowance; Vice President's and Speaker's, \$20,000 to \$30,000 with \$10,000 tax-free allowance.	Dem. Rep. A.L.	Voice vote approval		42 26 ..	0 9 ..	Jan. 19, 1949
ERP authorization: \$5,430,000,000 for European recovery, consisting of \$1,150,000,000 for April-June and \$4,280,000,000 for fiscal year starting July 1.		Voice vote approval		Voice vote approval		Apr. 19, 1949
Housing and slum-clearance bill. Provided for 810,000 dwelling units in 6 years, 5-year slum-clearance program, \$325,000,000 in loans and grants for farm housing aid.		Voice vote approval		Voice vote approval		July 15, 1949
North Atlantic Treaty. (For full text, consult index.)	Dem. Rep.	No vote required		50 32	2 11	July 21, 1949
National Security bill. Changed National Military Establishment to executive Department of Defense; made Departments of Army, Navy and Air Force "military departments."		356	7	Voice vote approval		Aug. 10, 1949
Military Assistance Program. Authorized \$1,314,010,000 in military aid: for Atlantic Pact countries, \$1 billion; Greece and Turkey, \$211,370,000; "general area" of China, \$75,000,000; and South Korea, Iran and Philippines, \$27,640,000.	Dem. Rep. A.L.	172 51 0	24 84 1	Voice vote approval		Oct. 28, 1949
Foreign-aid appropriations: \$5,809,990,000, consisting of \$4,852,380,000 for ERP, \$912,500,000 for Army-occupied areas, \$45,000,000 for Greek-Turkish aid, and \$110,000 for joint Congressional Foreign-Aid Committee.		Voice vote approval		Voice vote approval		Oct. 2, 1949
Minimum-wage bill. Raised minimum wage from 40c to 75c an hour.		131	19	Voice vote approval		Oct. 26, 1949
Farm bill. Supported prices for wheat, corn, cotton, rice, peanuts at 90% of parity through 1950, 80-90% through 1951, and 75-90% on sliding-scale basis thereafter.		175	34	46	7	Oct. 31, 1949
Natural-gas bill (Kerr bill). Would have prevented FPC control on prices for natural gas distributed by interstate pipelines.		176	174 (No reconsideration vote)	44	38	Vetoed Apr. 15, 1950
Housing bill. Authorized over \$3.5 billion in government loans and mortgage insurance for expansion of housing program. Also turned over to state and local authorities about 150 wartime and veterans' housing projects.		Voice vote approval		Voice vote approval		Apr. 20, 1950
Bill to increase Air Force and Army. Expanded Air Force to 70 groups and from 410,000 to 502,000 men; expanded Army from 592,000 to 837,000 men.		315	4	76	0	July 11, 1950
Social Security bill. Will raise present employer's and employee's 1½% payroll tax to 2% in 1954, 2½% in 1960, 3% in 1965, and 3¼% in 1970; provided financial aid to permanently disabled persons in need.		374	1	Voice vote approval		Aug. 28, 1950
Omnibus appropriations bill. Appropriated \$35.554 billion, including \$62.5 million loan to Spain, \$14,680,084,443 for Defense Dept., \$1.225 billion for rearming Western Europe, \$2.526 billion for Marshall plan, \$26.9 million for Point-4 program.		Voice vote approval		Voice vote approval		Sept. 6, 1950
Defense Production Act of 1950. Gave President power to curb prices, wages, and consumer credit, and to increase defense production.		Voice vote approval		Voice vote approval		Sept. 8, 1950
Bill to draft doctors, dentists, etc., up to 50 years of age, for 21-mo. service.		Voice vote approval		Voice vote approval		Sept. 9, 1950

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Internal Security Act of 1950. Provided for registering of Communists and their internment in times of emergency.	Dem.	186	18	24	6	Vetoed
	Rep.	126	1	27	1	Sept. 22, 1950
	A.L.	0	1	...	...
		(Reconsideration vote)				
	Dem.	161	45	26	10	Sept. 23, 1950
	Rep.	125	2	31	0	
	A.L.	0	1	...	...
Emergency defense-appropriations bill. Appropriated \$17,-099,902,285, including \$3.734 billion for Navy, \$3.166 billion for Army, \$260 million for atomic-weapon research, etc.		286	30	Voice vote approval		Sept. 27, 1950
Civil-defense bill. Provided \$3.1 billion to be supplemented by state and local governments for bomb shelters and other civil defense.		Voice vote approval		Voice vote approval		Jan. 12, 1951
GI insurance law. Provided free \$10,000 life insurance to all armed-forces personnel.		Voice vote approval		Voice vote approval		Apr. 25, 1951
Reciprocal Trade Agreements Act. Extended reciprocal trade agreement act to June 12, 1953, and directed President to end any concessions to Soviet bloc.		Voice vote approval		Voice vote approval		June 16, 1951
Draft act. Extended draft to July 1, 1955, and increased service to 24 months; provided preliminary study for universal military service.		339	41	Voice vote approval		June 19, 1951
Pension bill. Raised to \$120 a month the \$60-\$72 pensions to veterans disabled by nonservice disabilities.		Voice vote approval		Voice vote approval		Vetoed Aug. 6, 1951
		(Reconsideration vote)				
		318	45	69	9	Sept. 18, 1951
German peace resolution. Declared state of war with Germany ended.		376	0	Voice vote approval		Oct. 19, 1951
Taft-Hartley Law amendment. Permitted union-shop contracts without first polling employees.		307	18	Voice vote approval		Oct. 22, 1951
Atom-data bill. Authorized exchange of certain nonweapon atom data with friendly nations.		Voice vote approval		Voice vote approval		Oct. 30, 1951
Mutual Security Appropriation Bill. \$7,328,903,976 voted for global military and economic aid, including \$100 million for Spain.		Voice vote approval		Voice vote approval		Oct. 31, 1951
Japanese Peace Treaty. Formally ended state of war declared Dec. 7, 1941.		No vote required		66	10	Mar. 20, 1952
Tidelands Oil Bill. Gave clear title to states for submerged oil and other mineral deposits off their shores.		247	89	50	35	Vetoed May 29, 1952
McCarran-Walter Immigration and Nationality Act. Ended racial bars on immigration and retained quota system based on national origin.		205	53	Voice vote approval		Vetoed, June 25, 1952
		(Reconsideration vote)				
	Dem.	107	90	25	18	June 27, 1952
	Rep.	170	23	32	8	
	Ind.	1	0	...	...
West German Peace Contracts. Established working basis for relations with Bonn Government.		No vote required		77	5	July 1, 1952
New Puerto Rican Constitution. Made Puerto Rico a commonwealth and gave it greater home rule.		Voice vote approval		Voice vote approval		July 3, 1952
Fair Trade Acts of 1952. Allowed manufacturers and retailers to set prices on trade-marked articles where state laws concur.		196	10	64	16	July 14, 1952
Korea "G.I. Bill of Rights." Granted Korean veterans with 90 days service as of June 27, 1950, rights and benefits similar to those received by veterans of World War II.		322	1	Voice vote approval		July 16, 1952

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Social Security Amendment. Increased Social Security benefits to aged by 12½% and authorized pensioners to earn up to \$75 a month. Minimum payments set at \$5 a month.		Voice vote approval		Voice vote approval		July 18, 1952
Tidelands Oil Law. Gave coastal states right to all minerals in submerged lands within their historic boundaries; Federal government retained control of remainder of continental shelf.	Dem. Rep. Ind.	97 188 0	59 18 1	Voice vote approval		May 22, 1953
Foreign-Aid Authorization Act. Provided \$4,531,507,000 for military and economic aid to 53 free countries.	Dem. Rep. Ind.	126 94 1	29 80 0	Voice vote approval		Aug. 7, 1953
Refugee Immigration Act. Admitted 214,000 refugees in next 3 years over immigration quotas.		190	44	Voice vote approval		Aug. 7, 1953
Statehood for Hawaii and Alaska. (Allowed to die in House.)	Rep. Dem. Ind.	... ... ...	... ... ...	3 42 1	41 2 0	Defeated, 1954
Bricker Amendment. Would have limited President's treaty-making power. (Defeated by lack of ⅔ majority vote.)	Rep. Dem. Ind.	... ... ...	... ... ...	32 28 0	16 14 1	Defeated, Feb. 25, 1954
Cut in excise tax by \$999 million a year.		395	1	72	8	Apr. 1, 1954
Authorization of St. Lawrence Seaway.	Rep. Dem. Ind.	144 96 1	64 94 0	Voice vote approval		May 13, 1954
Extension of Reciprocal Trade Act for 1 year.		Voice vote approval		Voice vote approval		July 1, 1954
Public-housing bill. Allowed 35,000 units for year, but limited housing to cities where Federal slum clearance had displaced families.		358	30	59	21	Aug. 2, 1954
Tax revision to cost \$1.363 million in revenue.	Rep. Dem. Ind.	201 114 0	3 73 1	42 19 0	3 22 1	Aug. 16, 1954
Communist Control Act. Outlawed Communist party, though membership in party was not made crime.		265	2	79	0	Aug. 24, 1954
Compromise Mutual Security Appropriation of \$5,243,575,-795, of which \$2,781,499,816 is "new money."		188	77	Voice vote approval		Aug. 26, 1954
Farm bill. Provided flexible price support.		208	47	44	28	Aug. 28, 1954
Amendment to Atomic Energy Act of 1946. Allowed private interests to enter field of atomic power.	Rep. Dem. Ind.	Voice vote approval		6 38 1	35 6 0	Aug. 30, 1954
Social Security benefits increased and extended to additional 10,000,000 persons.		Voice vote approval		Voice vote approval		Sept. 1, 1954
Death penalty for peacetime espionage.		Voice vote approval		Voice vote approval		Sept. 3, 1954
Revocation of citizenship of persons convicted by conspiracy to overthrow government by force.		Voice vote approval		Voice vote approval		Sept. 3, 1954
Federal pay raise bill. Raised salaries of Senate and House members to \$22,500; Vice President and House Speaker to \$45,000; Justices of U. S. Supreme Court to \$35,000; etc.	Dem. Rep.	119 104	53 60	Voice vote approval		Mar. 2, 1955

Bill or treaty	Party	House vote		Senate vote		Date enacted
		Yea	Nay	Yea	Nay	
Military pay raise bill. Provided pay raise for armed services amounting to \$745 million per year.		Voice vote approval		Voice vote approval		Mar. 31, 1955
Postal pay raise bill. Increased pay of postal workers by average of 8.8%.	Dem. Rep.	212 116	0 66	37 29	0 11	Vetoed May 19, 1955
(Defeated in Senate by lack of 2/3 majority vote to override veto.)	Dem. Rep.	(Reconsideration vote)				Defeated May 24, 1955
		...	...	46 8	2 37	
Postal pay raise bill. Increased pay of postal workers by average of 8%.		407	1	78	0	June 10, 1955
Selective Service bill. Extended draft 4 years and doctors' draft 2 years.		388	5	Voice vote approval		June 30, 1955
Funds for Dixon-Yates transmission line included in appropriations bill.		Voice vote approval		Voice vote approval		Ordered canceled, July 11, 1955 ²
Military reserves bill. Raised present 800,000-man reserve to 2,900,000 by mid-1959.	Dem. Rep.	169 146	38 40	Voice vote approval		Aug. 9, 1955
Housing bill. Authorized construction of 45,000 public-housing units by mid-1956.	Dem. Rep.	153 35	37 131	Voice vote approval		Aug. 11, 1955
Federal minimum-wage bill. Increased minimum from 75¢ to \$1 per hour.	Dem. Rep.	192 170	29 25	Voice vote approval		Aug. 12, 1955
Harris-Fulbright bill. Would have exempted natural-gas producers from direct Federal rate control.	Dem. Rep.	86 123	136 67	22 31	24 14	Vetoed, Feb. 17, 1956
		(No reconsideration vote)				
Upper Colorado River project bill. Authorized \$756 million for irrigation and reclamation in Upper Colorado River basin.		Voice vote approval		Voice vote approval		Apr. 11, 1956
Agricultural Act of 1956. Would have set up "soil bank" program and would have restored high rigid support prices.	Dem. Rep.	189 48	35 146	35 15	4 31	Vetoed, Apr. 15, 1956
(Defeated in House by lack of 2/3 majority vote to override veto.)	Dem. Rep.	(Reconsideration vote)				Defeated, Apr. 18, 1956
		182 20	38 173	...	...
Compromise farm bill. Authorized \$1.2 billion "soil bank" program for paying farmers to withdraw acres from production.	Dem. Rep.	172 132	12 47	Voice vote approval		May 28, 1956
Highway bill. Called for expenditure of \$33.482 billion for road building (\$28.057 billion Federal expenditure and \$5.425 billion outlay by states).		Voice vote approval		89	1	June 29, 1956
National-defense bill. Appropriated \$34.6 billion for national defense, including \$16.5 billion for Air Force.		377	0	88	0	July 2, 1956
School bill. Would have provided \$1.6 billion in Federal aid for school construction.	Dem. Rep.	119 75	105 119	...	...	Defeated, July 5, 1956 ³
Foreign-aid authorization bill. Authorized \$4 billion for foreign-aid program for another year.		No record vote		No record vote		July 18, 1956
Social Security bill. Made women eligible for benefits at 62, totally disabled workers at 50.		Voice vote approval		Voice vote approval		Aug. 1, 1956
Housing bill. Provided for 70,000 new Federally subsidized housing units for next 2 years and liberalized Federal aid to private housing.		Voice vote approval		Voice vote approval		Aug. 7, 1956

¹ Passed with added provisions and sent back to House. ² Dixon-Yates contract ordered canceled by President and funds dropped by Congress from appropriations bill. ³ Bill killed, since all money bills must originate in House.

NOTE: You will find Bills and Treaties of 1957 following *News Record of 1957*. (See Table of Contents for *News Record*.)

How a Bill Becomes a Law

When a Senator or a Representative introduces a bill, he sends it to the clerk of his house, who gives it a number and title. This is the *first reading*, and the bill is referred to the proper committee.

The committee may decide the bill is unwise or unnecessary and *table* it, thus killing it at once. Or it may decide the bill is worthwhile and hold hearings to listen to facts and opinions presented by experts and other interested persons. After members of the committee have debated the bill and perhaps offered amendments, a vote is taken; and if the vote is favorable, the bill is sent back to the floor of the house.

The clerk reads the bill sentence by sentence to the house, and this is known as the *second reading*. Members may then debate the bill and offer amendments. In the House of Representatives, the time for debate is limited by a *cloture rule*, but there is no such restriction in the Senate except by a two-thirds vote for cloture. This makes possible a *filibuster*, in which one or more opponents hold the floor to defeat the bill.

The *third reading* is by title only, and the bill is put to a vote, which may be by voice or roll call, depending on the circumstances and parliamentary rules. Members who must be absent at the time but who wish to record

their vote may be paired if each negative vote has a balancing affirmative one.

The bill then goes to the other house of Congress, where it may be defeated, or passed with or without amendments. If the bill is defeated, it dies. If it is passed with amendments, a joint Congressional committee must be appointed by both houses to iron out the differences.

After its final passage by both houses, the bill is sent to the President. If he approves, he signs it, and the bill becomes a law. However, if he disapproves, he *veto*es the bill by refusing to sign it and sending it back to the house of origin with his reasons for the veto. The objections are read and debated, and a roll-call vote is taken. If the bill receives less than a two-thirds vote, it is defeated and goes no farther. But if it receives a two-thirds vote or greater, it is sent to the other house for a vote. If that house also passes it by a two-thirds vote, the President's veto is *overridden*, and the bill becomes a law.

Should the President desire neither to sign nor to veto the bill, he may retain it for ten days, Sundays excepted, after which time it automatically becomes a law without signature. However, if Congress has adjourned within those ten days, the bill is automatically killed, that process of indirect rejection being known as a *pocket veto*.

National Committee Chairmen Since 1921

Source: Republican and Democratic National Committees.

Chairman and (state)		Term	Chairman and (state)		Term
Republican			Republican (Contd.)		
John T. Adams (Iowa)		1921-24	Leonard W. Hall (N. Y.)		1953-57
William M. Butler (Mass.)		1924-28	Hugh Meade Alcorn, Jr. (Conn.)		1957-
Hubert Work (Colo.)		1928-29	Democratic		
Claudius H. Huston (Tenn.)		1929-30	Cordell Hull (Tenn.)		1921-24
Simeon D. Fess (Ohio)		1930-32	Clem Shaver (W. Va.)		1924-28
Everett Sanders (Ind.)		1932-34	John J. Raskob (N. Y.)		1928-32
Henry P. Fletcher (Pa.)		1934-36	James A. Farley (N. Y.)		1932-40
John Hamilton (Kans.)		1936-40	Edward J. Flynn (N. Y.)		1940-43
Joseph W. Martin, Jr. (Mass.)		1940-42	Frank C. Walker (Mont.)		1943-44
Harrison E. Spangler (Iowa)		1942-44	Robert E. Hannegan (Mo.)		1944-47
Herbert Brownell, Jr. (N. Y.)		1944-46	J. Howard McGrath (R. I.)		1947-49
Carroll Reece (Tenn.)		1946-48	William M. Boyle, Jr. (Mo.)		1949-51
Hugh D. Scott, Jr. (Pa.)		1948-49	Frank E. McKinney (Ind.)		1951-52
Guy G. Gabrielson (N. J.)		1949-52	Stephen A. Mitchell (Ill.)		1952-54
Arthur E. Summerfield (Mich.)		1952-53	Paul M. Butler (Ind.)		1955-
C. Wesley Roberts (Kans.)		1953-53			

Republican National Committee: 1625 I St., Washington 6, D. C.

Democratic National Committee: 1001 Connecticut Ave., Washington 6, D. C.

The Confederate States of America

State	Seceded from Union	Readmitted to Union	State	Seceded from Union	Readmitted to Union
1. South Carolina	Dec. 20, 1860	July 18, 1866	7. Texas	Mar. 2, 1861	Mar. 30, 1870
2. Mississippi	Jan. 9, 1861	Feb. 23, 1870	8. Virginia	Apr. 17, 1861	Jan. 27, 1870
3. Florida	Jan. 10, 1861	June 25, 1868	9. Arkansas	May 6, 1861	June 22, 1868
4. Alabama	Jan. 11, 1861	July 13, 1868	10. North Carolina	May 20, 1861	July 20, 1868
5. Georgia	Jan. 19, 1861	July 15, 1870	11. Tennessee	June 24, 1861	July 24, 1866
6. Louisiana	Jan. 26, 1861	May 26, 1865			

NOTE: 4 other slave states—Delaware, Kentucky, Maryland and Missouri—remained in the Union.

Diplomatic Personnel To and From the U. S.

(As of Sept. 1957.) Source: U. S. Department of State.

Country	U. S. Representative to	Rank	Representative from	Rank
Afghanistan	Sheldon T. Mills	Amb.	Dr. Najib-Ullah	Amb.
Argentina	Willard L. Beaulac	Amb.	Dr. Don Mauricio L. Yadarola	Amb.
Australia	William J. Sebald	Amb.	Sir Percy Spender	Amb.
Austria	Harrison F. Matthews	Amb.	Dr. Karl Gruber	Amb.
Belgium	John C. Folger	Amb.	Baron Silvercruijs	Amb.
Bolivia	Philip W. Bonsal	Amb.	Don Victor Andrade	Amb.
Brazil	Ellis O. Briggs	Amb.	Ernani do Amaral Peixoto	Amb.
Bulgaria ¹				
Burma	Walter P. McConaughy	Amb.	U Win	Amb.
Cambodia	Carl W. Strom	Amb.	Nong Kimny	Amb.
Canada	Livingston T. Merchant	Amb.	N. A. Roberson	Amb.
Ceylon	Maxwell H. Gluck	Amb.	R. S. S. Gunewardene	Amb.
Chile	Cecil B. Lyon	Amb.	Mariano Puga	Amb.
China ²	Karl L. Rankin	Amb.	Dr. Hollington K. Tong	Amb.
Colombia	John M. Cabot	Amb.	Dr. José Gutierrez Gomez	Amb.
Costa Rica	Robert F. Woodward	Amb.	Don Gonzalo J. Facio	Amb.
Cuba	Earl E. T. Smith	Amb.	Dr. Miguel Angel Campa	Amb.
Czechoslovakia	U. Alexis Johnson	Amb.	Dr. Karel Petřelka	Amb.
Denmark	Val Peterson	Amb.	Henrik de Kaufmann	Amb.
Dominican Republic	Joseph S. Farland	Amb.	Don Manuel A. de Moya	Amb.
Ecuador	Christian M. Ravndal	Amb.	Dr. José R. Chiriboga	Amb.
Egypt	Raymond A. Hare	Amb.	Dr. Ahmed Hussein	Amb.
El Salvador	Thomas C. Mann	Amb.	Dr. Don Héctor David Castro	Amb.
Estonia	Legation closed	....	Johannes Kalv ⁴	CG
Ethiopia	Don C. Bliss	Amb.	Yilma Deressa	Amb.
Fed of Malaya	Thomas K. Wright	Cd'A	Dr. Ismail bin Dato'Ab-dulrahman	Amb.
Finland	John D. Hickerson	Amb.	Johan A. Nykopp	Amb.
France	Amory Houghton	Amb.	Hervé Alphan	Amb.
Germany	David K. E. Bruce	Amb.	Heinz L. Krekeler	Amb.
Ghana	Wilson C. Flake	Amb.	Maj. S. K. Anthony	Cd'A
Great Britain	John Hay Whitney	Amb.	Sir Harold A. Caccia	Amb.
Greece	George V. Allen	Amb.	George V. Melas	Amb.
Guatemala	Edward J. Sparks	Amb.	Col. José Luis Cruz-Salazar	Amb.
Haiti	Gerald A. Drew	Amb.	Dantès Bellegarde	Amb.
Honduras	Whiting Willauer	Amb.	Tiburcio Carias Castillo	Amb.
Hungary	Edward T. Walles	Min.	Dr. Péter Kós	Min.
Iceland	John J. Muccio	Amb.	Thor Thors	Amb.
India	Ellsworth Bunker ⁵	Amb.	Gaganvihari Lallubhai Mehta	Amb.
Indonesia	John M. Allison	Amb.	Moekarto Notowidigdo	Amb.
Iran	Selden Chapin	Amb.	Dr. Ali Amini	Amb.
Iraq	Waldemar J. Gallman	Amb.	Dr. Moussa Al-Shabandar	Amb.
Ireland	R. W. Scott McLeod	Amb.	John Joseph Hearne	Amb.
Israel	Edward B. Lawson	Amb.	Abba Eban	Amb.
Italy	James D. Zellerbach	Amb.	Manlio Brosio	Amb.
Japan	Douglas MacArthur 2nd	Amb.	Korchiro Asakai	Amb.
Jordan	Lester Dewitt Mallory	Amb.	Dr. Yousuf Haikal	Amb.
Korea	Walter C. Dowling	Amb.	Dr. You Chan Yang	Amb.
Laos	J. Graham Parsons	Amb.	Ourot R. Souvannavong	Amb.
Latvia	Legation closed	....	Dr. Arnolds Spekke	Min.
Lebanon	Donald R. Heath	Amb.	Dr. Victor A. Khouri	Amb.
Liberia	Richard Lee Jones	Amb.	George A. Padmore	Amb.
Libya	John L. Tappin	Amb.	Suleiman Jerbi	Amb.
Lithuania	Legation closed	....	Juozas Kajeckes	Min.
Luxemburg	Vinton Chapin	Amb.	Hugues Le Gallais	Amb.
Mexico	Robert C. Hill	Amb.	Don Manuel Tello	Amb.
Morocco	Cavendish W. Cannon	Amb.	Dr. El Mehdi Ben Aboud	Amb.
Nepal	Ellsworth Bunker ⁵	Amb.	Gen. Shanker Shamsher Jang Bahadur Rana	Amb.
Netherlands	Philip Young	Amb.	Dr. J. H. van Roijen	Amb.
New Zealand	Francis H. Russell	Amb.	Sir Leslie Knox Munro	Amb.
Nicaragua	Thomas E. Whelan	Amb.	Dr. Don Guillermo Sevilla-Sacasa	Amb.

Country	U. S. Representative to	Rank	Representative from	Rank
Norway	Miss Frances E. Willis	Amb.	Wilhelm Munthe de Morgenstierne	Amb.
Pakistan	James M. Langley	Amb.	Mohammed Ali	Amb.
Panamá	Julian F. Harrington	Amb.	Don Ricardo M. Arias E.	Amb.
Paraguay	Walter C. Ploesser	Amb.	Dr. Don Osvaldo Chaves	Amb.
Peru	Theodore C. Achilles	Amb.	Don Fernando Berckemeyer	Amb.
Philippines	Charles E. Bohlen	Amb.	Gen. Carlos P. Romulo	Amb.
Poland	Jacob D. Beam	Amb.	Romuald Spasowski	Amb.
Portugal	James C. H. Bonbright	Amb.	Luis Esteves Fernandes	Amb.
Rumania	Robert H. Thayer	Min.	Silviu Brucan	Min.
Saudi Arabia	George Wadsworth ²	Amb.	Sheikh Abdullah Al-Khayyal	Amb.
Spain	John Lodge	Amb.	Don José M. de Arellza	Amb.
Sudan	Lowell C. Pinkerton	Amb.	Dr. Ibrahim Anis	Amb.
Sweden	Francis White	Amb.	Erik Boheman	Amb.
Switzerland	Henry J. Taylor	Amb.	Henry de Torrenteé	Amb.
Syria	James S. Moose, Jr.	Amb.	Dr. Mamun Hamul	Cd'A ⁴
Thailand	Max Waldo Bishop	Amb.	Thanat Khohman	Amb.
Tunisia	G. Lewis Jones, Jr.	Amb.	Mongi Slim	Amb.
Turkey	Fletcher Warren	Amb.	Suat Hayri Urguplu	Amb.
Un. of So. Africa ..	Henry A. Byroade	Amb.	W. C. du Plessis	Amb.
U.S.S.R.	Llewellyn E. Thompson, Jr.	Amb.	Georgi N. Zaroubin	Amb.
Uruguay	Jefferson Patterson	Amb.	Julio A. Lacarte	Amb.
Venezuela	Dempster McIntosh	Amb.	Dr. César Gonzáles	Amb.
Viêtnam	Elbridge Durbrow	Amb.	Tran Van Chuong	Amb.
Yemen	George Wadsworth ²	Min.	Sayed Abdurrahman Ibn Abdussamed Abu-Taleb	Cd'A
Yugoslavia	James W. Riddleberger	Amb.	Leo Mates	Amb.

¹ U. S. broke off diplomatic relations with Bulgaria on Feb. 20, 1950. ² Accredited to Saudi Arabia and Yemen; resident Jidda. ³ Formosa (Taiwan). ⁴ Legation in New York. ⁵ Accredited to India and Nepal; resident in New Delhi, India.

(Amb.—Ambassador; Min.—Minister; CG—Consul General; Cd'A—Charge d'Affaires)

Assassinations and Attempts in U. S. Since 1865

CERMAK, Anton J. (Mayor of Chicago): Shot Feb. 15, 1933, in Miami by Giuseppe Zangara, who attempted to assassinate Franklin D. Roosevelt; Cermak died Mar. 6.

GARFIELD, James A. (President of U. S.): Shot July 2, 1881, in Washington, D. C., by Charles J. Guiteau; died Sept. 19.

LINCOLN, Abraham (President of U. S.): Shot Apr. 14, 1865, in Washington, D. C., by John Wilkes Booth; died Apr. 15.

LONG, Huey P. (U. S. Senator from Louisiana): Shot Sept. 8, 1935, in Baton Rouge by Dr. Carl A. Weiss; died Sept. 10.

McKINLEY, William (President of U. S.): Shot Sept. 6, 1901, in Buffalo by Leon Czolgosz; died Sept. 14.

ROOSEVELT, Franklin D. (President-elect of U. S.): Escaped assassination unhurt Feb. 15, 1933, in Miami. See Cermak.

ROOSEVELT, Theodore (ex-President of U. S.): Escaped assassination (though shot) Oct. 14, 1912, in Milwaukee while campaigning for President.

SEWARD, William H. (Secretary of State): Escaped assassination (though injured) Apr. 14, 1865, in Washington, D. C., by Lewis Powell (or Paine), accomplice of John Wilkes Booth.

TRUMAN, Harry S. (President of U. S.): Escaped assassination unhurt Nov. 1, 1950, in Washington, D. C., as 2 Puerto Rican nationalists attempted to shoot their way into Blair House.

The Liberty Bell

The Liberty Bell was cast in England in 1752 for the Pennsylvania Statehouse (now Independence Hall). Damaged in transit, it was recast in Philadelphia in 1753. It is inscribed with the words, "Proclaim liberty throughout all the land unto all the inhabitants thereof" (Lev. 25:10). The bell was rung on July 8, 1776, for the first pub-

lic reading of the Declaration of Independence. Hidden in Allentown during the British occupation of Philadelphia, it was replaced in Independence Hall in 1778 where it remains today. The bell cracked on July 8, 1835, while tolling the death of Chief Justice John Marshall.

THE UNITED STATES ARMED SERVICES

U. S. MILITARY ACADEMY

Source: U. S. Military Academy.

Established in 1802 by an Act of Congress, the U. S. Military Academy is located on the west bank of the Hudson River some 50 miles north of New York City. Admission may be gained only by appointment to one of the 2,496 cadetships authorized by law. These cadetships are allocated among the following sources of nomination:

Noncompetitive:

Representatives (4 each)	1,740
Senators (4 each)	384
Other:	
Hawaii and Alaska	8
District of Columbia,	6
Canal Zone Government ...	2
Puerto Rico	4
Vice Presidential	3
	23

Competitive:

Army and Air Force:	
Regular components	90
Reserve components	90
Presidential	89
Sons of deceased veterans	40
Honor military & honor naval schools	40
Total	2,496

Graduation of the senior class leaves about 750 vacant cadetships each year, and candidates may be nominated for these vacancies during the year preceding the admission date—the first Tuesday in July.

Candidates must be citizens of the U. S., between the ages of 17 and 22, unmarried, high school graduates and able to meet the mental, medical and physical aptitude requirements. Candidates with acceptable college records may qualify mentally by satisfactory performance on the College Entrance Examination Board's Scholastic Aptitude Test; all other candidates take the CEEB's Scholastic Aptitude Test and achievement tests in intermediate mathematics and English composition. Entrance requirements and procedures for appointment are described in the U. S. Military Academy Catalog, available without charge from The Registrar, U. S. Military Academy, West Point, N. Y.

Cadets receive their entire education at Government expense and are paid \$111.15 per month. From this sum, they pay for their uniforms, textbooks, etc. Upon successful completion of the 4-year course, the graduate receives the degree of Bachelor of Science and is commissioned a second lieutenant in the regular Army or Air Force.

U. S. NAVAL ACADEMY

Source: U. S. Naval Academy.

On October 10, 1845, the Naval School was established at Fort Severn, Annapolis, Maryland. Five years later it was renamed the United States Naval Academy, and the following year a regular four-year course was adopted. At present, the curriculum consists of courses in the following departments: executive; seamanship and navigation; ordnance and gunnery; marine engineering; aviation; electrical engineering; mathematics; English, history and government; foreign languages; hygiene; and physical education.

Candidates are selected as follows:

- 5 from the District of Columbia.
- 40 sons of men and women killed in action or who have died, or may hereafter die of wounds or injuries, or disease contracted, in active service in World Wars I and II and other periods.
- 75 annually from among sons of officers and enlisted men in the regular Army, Navy, Marine Corps, Air Force and Coast Guard.
- 160 enlisted Navy and Marine personnel selected annually by competitive examination.
- 160 annually chosen by the Secretary of the Navy from the Naval and Marine Corps Reserves.
- 5 Puerto Ricans chosen by the Resident Commissioner of Puerto Rico.
- 1 on the recommendation of the Governor of Puerto Rico.
- 4 Filipinos designated by the President of the United States.
- 1 from the Canal Zone.
- 20 annually from schools designated by the Army and Navy as honor schools and from NROTC schools.
- 20 from the American republics and the Dominion of Canada.

Unlimited: Sons of persons who have been or shall hereafter be awarded the Congressional Medal of Honor.

Each Senator, Representative, delegate to Congress, and the Vice President may have not more than 5 Midshipmen at the Naval Academy. The Board of Commissioners selects the 5 from the District of Columbia. The President selects the 40 sons of deceased veterans of World Wars and the 75 sons of officers and enlisted men in the regular Army, Navy, Marine Corps, Air Force and Coast Guard. The President also appoints the sons of holders of the Medal of Honor.

Subject to the existence of vacancies and the availability of accommodations, the Secretary of the Navy may nominate for appointment a limited number of additional candidates. These must be recom-

mended by the Academic Board from among the fully qualified, regularly nominated alternate and competitive candidates of the same year who were unable to enter because of the appointment of men preceding them in nomination.

Candidates for admission must be between 17 and 22 years of age on July 1 of their entering year. They may qualify by taking entrance examinations, by presenting an acceptable secondary school certificate and taking special examinations in English and mathematics, or by completing a sufficient number of acceptable college courses. Candidates must meet physical requirements and be unmarried.

Midshipmen are paid \$111.15 per month. Graduates of the Academy are granted Bachelor of Science degrees and are commissioned as ensigns in the Navy or second lieutenants in the Marine Corps. In addition, a limited number of the members of graduating classes may be commissioned in the U. S. Air Force.

U. S. COAST GUARD ACADEMY

Source: U. S. Coast Guard Academy.

The cadet system of the Coast Guard was established by law on July 31, 1876, when the "School of Instruction" for the Revenue Cutter Service, predecessor to the Coast Guard, was authorized.

The *J. C. Dobbin*, a converted schooner, served as the first schoolship, and was succeeded in 1878 by the bark *Chase*, a ship built for cadet training. First winter quarters were in a sail loft at New Bedford, Mass. The school was moved in 1900 to a two-story frame school at Curtis Bay, Md., to provide a more technical education; and in 1910 to Fort Trumbull, New London, Conn. In 1932 the Academy moved to its present site in the latter city.

The 4-year college-level curriculum leads to a Bachelor of Science degree and to a commission of ensign in the U. S. Coast Guard.

Cadets receive appointment to the Academy through a nation-wide competitive examination, held annually in February. Candidates must be between 17 and 22 years of age, physically sound, unmarried and at least 5' 6" tall. They must agree to remain unmarried until graduation and to serve at least 4 years on active duty. Cadets receive \$111.15 per month to cover their uniform and incidental expenses, and are furnished their rations and quarters. Applications for appointment may be made to the Commandant (PTP), U. S. Coast Guard, Washington 25, D. C.

U. S. MERCHANT MARINE ACADEMY

Source: U. S. Merchant Marine Academy.

The U. S. Merchant Marine Cadet Corps was established Mar. 15, 1938, and its Academy is located on the south shore of

Long Island Sound at Kings Point, N. Y. The Academy has a complement of 800 cadet-midshipmen representing every U. S. state, D. C., Alaska, the Canal Zone, Hawaii, and Puerto Rico. In addition, it is authorized to receive each year, for the full period of training, not more than 12 candidates from Latin American republics.

Appointments to the Academy are governed by a state and territory quota system, based on population, and are made through competitive examinations. A candidate must be an unmarried citizen between 17 and 21, with a one-year age waiver granted to veterans. He must have 15 high-school credits, including 1 unit in algebra, 1 in plane geometry, 1 in physics, and 3 in English.

The course is 4 years, consisting of 1 year as Fourth Classman at the Academy, 1 year as Third Classman aboard a merchant ship, and 2 years as Second and First Classman at the Academy. Study includes marine engineering, navigation, electricity, ship construction, naval science and tactics, economics, business, languages, history, and other subjects.

On completion of their courses, cadet-midshipmen are examined for their original Merchant Marine license as deck or engineer officers in any ship in the U. S. Merchant Marine. They also receive Bachelor of Science degrees and commissions as officers in the U. S. Naval Reserve. Over 9,000 officers have been graduated.

U. S. AIR FORCE ACADEMY

Source: U. S. Air Force Academy.

The bill establishing the Air Force Academy was signed by President Eisenhower on Apr. 1, 1954. The first class of 306 cadets was sworn in on July 11, 1955, at Lowry Air Force Base, Denver, Colo., the Academy's temporary location. Permanent headquarters, at Colorado Springs, Colo., are expected to be completed in 1958.

Eventually the Academy will have a complement of 2,496. Qualified sons of Medal of Honor winners will be admitted in addition to the number of vacancies.

Candidates must be citizens of the U. S., at least 17 but less than 22 on July 1 of the year for which they seek admission, unmarried, at least 5' 4" and not more than 6' 4" tall and able to meet the mental and physical requirements. A candidate is required to take the following examinations and tests: (1) The Air Force Medical Examination for Flying Training; (2) The Air Force Pilot Aptitude and Observer Aptitude Tests; (3) The College Entrance Examination Board Tests; and (4) a physical aptitude examination.

Cadets receive their entire education at Government expense and, in addition, are paid \$111.15 per month. From this sum, they pay for their uniforms, textbooks,

etc. Upon completion of the 4-year course, leading to a bachelor's degree, a cadet who meets the physical qualifications is ap-

pointed a second lieutenant in the regular U. S. Air Force as a navigator, then receives full pilot training.

History of the Armed Services

Source: U. S. Department of Defense.

U. S. ARMY

When Gen. Washington, on July 3, 1775, took command of the colonial militia (about 8,000 men) besieging Boston, the event marked the union of the forces of the 13 separate colonies under one head, and the U. S. Army was born. In Jan. 1776, the Continental Congress decided that these troops should be separate in organization from those of local communities and established them as the U. S. Regular Army. When these forces were disbanded after the war, only some 80 officers and men were retained to guard U. S. Army stores. From this humble beginning, in the ensuing years, the strength of the U. S. Army rose or fell according to national and international conditions.

U. S. NAVY

In Sept. and Oct. 1775, Gen. Washington maintained 5 schooners and a sloop with officers and men from his army for the purpose of preying on inbound English supply vessels and thereby caused the birth of the U. S. Navy. In Dec. 1775, the Continental Congress expanded this by providing for construction of naval craft and the appointment of a marine committee (one member from each colony) which continued until 1794 when further ships and manpower were provided for by act of Congress. Upon completion of these ships in 1798, a Navy Department was established as the controlling agency, and the secretary given Cabinet rank.

U. S. AIR FORCE

Until creation of the National Military Establishment in September 1947, which united the services under one department, military aviation was a part of the U. S. Army. In the Army, aeronautical operations came under the Signal Corps from 1907 to 1918, when the U. S. Air Service was established. In 1926, the U. S. Air Corps came into being and remained until 1942, when the Army Air Forces succeeded it as the Army's air arm.

In the Navy, ship-based fighters and bombers are attached to the several fleets and are under the orders of the fleet commanders. Marine Corps aviation comes under control of the Navy.

In 1947, the U. S. Air Force was established as an independent military service under the National Military Establishment. At that time, the name U. S. Air Corps and the names of the services within the Army Air Forces were abolished.

U. S. COAST GUARD

Our country's oldest continuous seagoing service, the U. S. Coast Guard traces its history back to 1790 when the First Congress authorized the construction of ten vessels for the collection of revenue. Known first as the Revenue Marine, and later as the Revenue Cutter Service, the Coast Guard received its present name in 1915 under an act of Congress combining the Revenue Cutter Service with the Life-Saving Service. In 1939, the Lighthouse Service of the Department of Commerce was also consolidated with this unit. The Bureau of Marine Inspection and Navigation was transferred temporarily to the Coast Guard in 1942, permanently in 1946. Through its antecedents, the Coast Guard is one of the oldest organizations under the Federal government and, until the Navy Department was established in 1798, served as the only U. S. armed force afloat. In time of peace it operates under the Treasury Department, serving as the Nation's primary agency for promoting marine safety and enforcing Federal maritime laws. In time of war, or on direction of the President, it is attached to the Navy Department.

U. S. MARINE CORPS

Founded in 1775 and observing its official birthday on Nov. 10, the U. S. Marine Corps was developed to be able to serve to advantage on land or sea.

It has been used successfully in every U. S. war beginning with the Revolution, when it consisted of 2 battalions. It reached its high in achievement in World War II and in the Korean conflict when over 75% of its officers and men saw combat.

Selective Service Classifications

I-A: Available for military service.

I-A-0: Conscientious objector available for noncombatant military service only.

I-C: Member of Armed Forces, Coast and Geodetic Survey or Public Health Service.

I-D: Member of reserve component or student taking military training.

I-O: Conscientious objector available for civilian work contributing to maintenance of national health, safety or interest.

I-S: Student deferred by statute.

I-W: Conscientious objector performing civilian work contributing to maintenance of national health, safety or interest.

- II-A:** Registrant deferred because of civilian occupation (except agriculture and activity in study).
- II-C:** Registrant deferred because of agricultural occupation.
- II-S:** Registrant deferred because of activity in study.
- III-A:** Registrant with child or children; and registrant deferred by reason of extreme hardship and privation to dependents.

- IV-A:** Registrant who has completed service; sole surviving son.
- IV-B:** Officials deferred by law.
- IV-C:** Aliens.
- IV-D:** Minister of religion or divinity student.
- IV-F:** Physically, mentally or morally unfit.
- V-A:** Registrant over age of liability for military service.

Highest Ranking Officers in the Armed Forces

ARMY

Generals of the Army: George C. Marshall; Douglas MacArthur; Omar N. Bradley.

Generals: Maxwell D. Taylor; Henry I. Hodes; Lyman L. Lemnitzer; Willard G. Wyman; Williston B. Palmer; Isaac D. White; Cortlandt Van Rensselaer Schuyler; George H. Decker.

AIR FORCE

Generals: Nathan F. Twining; Thomas D. White; Lauris Norstad; Curtis E. LeMay; Otto P. Weyland; Earle E. Partridge; Edwin W. Rawlings; Laurence S. Kuter.

NAVY

Fleet Admirals: William D. Leahy; Chester W. Nimitz.

Admirals: Arthur W. Radford; Arleigh A. Burke; Felix B. Stump; Jerauld Wright; Robert P. Briscoe; Walter F. Boone; Harry D. Felt.

MARINE CORPS

General: Randolph McC. Pate.

Lieutenant Generals: Vernon E. Megee; Ray A. Robinson; Edwin A. Pollock; Merrill B. Twining; Verne J. McCaul.

COAST GUARD

Vice Admiral: Alfred C. Richmond, Commandant.

Rear Admiral: James A. Hirschfield, Assistant Commandant.

U. S. Military Actions Other Than Declared Wars

HAWAII (1893): U. S. Marines, ordered to land by U. S. Minister Stevens, aided the revolutionary Committee of Safety in overthrowing the native government. Stevens then proclaimed Hawaii a U. S. protectorate. Annexation, resisted by the Democratic regime in Washington, was not formally accomplished until 1898.

CHINA (1900): Boxers (a group of Chinese revolutionists) occupied Peking and laid siege to foreign legations. U. S. troops joined an "international expedition which relieved the city

PANAMÁ (1903): After Colombia had rejected a proposed agreement for relinquishing sovereignty over the Panama Canal Zone, revolution broke out, aided by promoters of the Panama Canal Co. Two U. S. warships were standing by to protect American privileges. The U. S. recognized the Republic of Panamá on Nov. 6.

DOMINICAN REPUBLIC (1904): When the Dominican Republic failed to meet debts owed to the U. S. and foreign creditors, Theodore Roosevelt declared the U. S. intention of exercising "international police power" in the Western Hemisphere whenever necessary. The U. S. accordingly administered customs and managed debt payments of the Dominican Republic from 1905-07.

NICARAGUA (1911): The possibility of foreign control over Nicaragua's canal route led to U. S. intervention and agreement. The U. S. landed Marines in Nicaragua (Aug. 14, 1912) to protect American interests there. A small detachment remained until 1933.

MEXICO (1914): Mexican Dictator Huerta, opposed by President Wilson, had the support of European governments. An incident involving unarmed U. S. sailors in Tampico led to the landing of U. S. forces on Mexican soil. Vera Cruz was bombarded by the Navy to prevent the landing of munitions from a German vessel. At the point of war, both powers agreed to mediation by Argentina, Brazil and Chile. Huerta abdicated, and Carranza succeeded to the presidency.

HAITI (1915): U. S. Marines imposed a military occupation. Haiti signed a treaty making it a virtual protectorate of the U. S. until troops were withdrawn in 1934.

MEXICO (1916): Raids by Pancho Villa cost American lives on both sides of the border. President Carranza consented to a punitive expedition lead by Gen. Pershing, but antagonism grew in Mexico. Wilson withdrew the U. S. force when war with Germany became imminent.

DOMINICAN REPUBLIC (1916): Renewed intervention in the Dominican Republic with internal administration by U. S. naval officers lasted until 1924.

U. S. Armed Forces Monthly Pay Rates for Officers

Source: Department of Defense, Public Information Office.

Army, Air Force and Marine Corps	Rank	Pay grade	Monthly pay	Monthly allowances for quarters	
				With dependents	With no dependents
General of the Army*	Fleet Admiral	O-8	\$1,163.30	\$171.00	\$136.80
General	Admiral	O-8	1,163.30	171.00	136.80
Lieutenant General	Vice Admiral	O-8	1,063.30	171.00	136.80
Major General	Rear Admiral (upper half)	O-8	963.30	171.00	136.80
Brigadier General	Rear Admiral (lower half) and Commodore	O-7	800.28	171.00	136.80
Colonel	Captain	O-6	592.80	136.80	119.70
Lieutenant Colonel	Commander	O-5	474.24	136.80	102.60
Major	Lieutenant Commander	O-4	400.14	119.70	94.20
Captain	Lieutenant	O-3	326.04	102.60	85.50
First Lieutenant	Lieutenant (junior grade)	O-2	259.36	94.20	77.10
Second Lieutenant	Ensign	O-1	222.30	85.50	68.40
Chief Warrant Officer	Chief Warrant Officer	W-4	332.90	119.70	94.20
Same	Same	W-3	302.64	102.60	85.50
Chief Warrant Officer	Same	W-2	264.82	94.20	77.10
Warrant Officer (junior grade)	Warrant Officer	W-1	219.42	85.50	68.40

* Does not apply to Marine Corps.

Special Pay for Longevity

(Amounts listed below are monthly increases in the basic pay for longevity of service)

O-8—\$58.50 after 3 years; \$54.60 after 30 years.	O-1—\$14.82 after 2 years; \$59.28 after 3; \$15.60 after 6, 8, 10, 12 and 14 years.
O-7—\$49.92 after 3 years; \$54.60 after 26; \$62.40 after 30.	W-4—\$22.00 after 2 years; \$15.60 after 6, 8 and 10; \$19.50 after 12; \$31.20 after 14; \$15.60 after 16, 18, 22, 26 and 30 years.
O-6—\$39.00 after 3 years; \$23.40 after 16; \$62.40 after 18; \$31.20 after 22, 26 and 30 years.	W-3—\$21.06 after 2 years; \$7.80 after 6, 8 and 10; \$11.70 after 12; \$15.60 after 14; \$7.80 after 16; \$23.40 after 18; \$22.40 after 22; \$15.60 after 26 and 30 years.
O-5—\$32.76 after 3 years; \$23.40 after 12; \$31.20 after 14; \$15.60 after 16; \$31.20 after 18, 22 and 26 years.	W-2—\$15.98 after 2 years; \$7.80 after 6; \$15.60 after 8, 10, and 12; \$14.60 after 14; \$7.80 after 16; \$15.60 after 18, 22, 26 and 30 years.
O-4—\$28.86 after 3 years; \$23.40 after 8; \$31.20 after 10; \$15.60 after 12, 14 and 16; \$31.20 after 18; \$15.60 after 22 and 26 years.	W-1—\$31.78 after 2 years; \$15.60 after 6; \$19.50 after 8; \$7.80 after 10; \$11.70 after 12; \$7.80 after 14 and 16; \$15.60 after 18, 22 and 26 years.
O-3—\$24.96 after 3 years; \$23.40 after 4; \$31.20 after 6; \$15.60 after 8, 10, 12, 14, 16, 18 and 22 years.	
O-2—\$14.82 after 2 years; \$59.28 after 3; \$15.60 after 6, 8, 10, 12 and 14 years.	

Insignia and Ranks of the Armed Forces

Army, Air Force and Marines		Navy and Coast Guard		
Insignia	Rank	Insignia	Rank	Stripes ¹
Five stars	General of the Army, Air Force	Five stars	Fleet Admiral	1-4-0
Four stars	General	Four stars	Admiral	1-3-0
Three stars	Lieutenant General	Three stars	Vice Admiral	1-2-0
Two stars	Major General	Two stars	Rear Admiral	1-1-0
One star	Brigadier General	One star	Commodore	1-0-0 ²
Silver eagle	Colonel	Silver eagle	Captain	0-4-0
Silver maple leaf	Lieutenant Colonel	Silver maple leaf	Commander	0-3-0
Gold maple leaf	Major	Gold maple leaf	Lt. Commander	0-2-1
Two silver bars	Captain	Two silver bars	Lieutenant	0-2-0
One silver bar	First Lieutenant	One silver bar	Lieutenant (jg)	0-1-1
One gold bar	Second Lieutenant	One gold bar	Ensign	0-1-0
Gold bar with rounded ends, brown-enamel top, longitudinal center of gold (3/4" wide x 1" long)	Chief Warrant Officer, Commissioned Warrant Officer (Marines)	Warrant specialty in silver	Commissioned Warrant Officer	0-1-0 ³
Same as Chief Warrant Officer but with latitudinal center of gold	Warrant Officer (jg)	Warrant specialty in gold	Warrant Officer	0-0-1 ³

¹ Of gold embroidery. First figure is number of 2-in. stripes; second is number of 1/2-in. stripes; third is number of 1/4-in. stripes. ² Wartime only. ³ Broken at 2-in. intervals with 1/2 in. of blue.

U. S. Armed Forces Monthly Pay Rates for Enlisted Personnel

Source: Department of Defense, Public Information Office.

Army rank ¹	Air Force rank	Marine rank	Navy rank	Pay grade	Monthly pay
Master Sergeant	Master Sergeant	Master Sergeant	Chief Petty Officer	E-7	\$206.39
Sergeant 1st Class	Technical Sergeant	Technical Sergeant	Petty Officer 1st Class	E-6	175.81
Sergeant	Staff Sergeant	Staff Sergeant	Petty Officer 2nd Class	E-5	145.24
Corporal	Airman 1st Class	Sergeant	Petty Officer 3rd Class	E-4	122.30
Private 1st Class	Airman 2nd Class	Marine Corporal	Navy Seaman	E-3	99.37
Private	Airman 3rd Class	Pvt. 1st Class Marine	Seaman Apprentice	E-2	85.80
Private ²	Airman, Basic*	Private*	Seaman Recruit*	E-1	83.20
Private ³	Airman, Basic†	Private†	Seaman Recruit†	E-1	78.00

¹ The Army has established the following additional new ranks: Master Specialist (E-7), Specialist First Class (E-6), Specialist Second Class (E-5), and Specialist Third Class (E-4). ² With over 4 months' service. ³ With less than 4 months' service.

BASIC MONTHLY ALLOWANCE FOR QUARTERS: No dependents, \$51.30 for all pay grades; 1 dependent, \$51.30 for pay grades E-1 through E-3, \$77.10 for pay grades E-4 through E-7; 2 dependents, \$77.10 for all pay grades; over 2 dependents, \$96.90 for all pay grades.

Special Pay for Longevity

(Amounts listed below are monthly increases in the basic pay for longevity of service)

E-7—\$15.91 after 2 years; \$7.80 after 4 and 6; \$15.60 after 8; \$7.80 after 10; \$11.70 after 12; \$7.80 after 14 and 16; \$15.60 after 18, 22 and 26 years.	E-4—\$18.10 after 2 years; \$19.50 after 4; \$7.80 after 6; \$11.70 after 8; \$7.80 after 10, 12, 14, 16 and 18 years.
E-6—\$11.39 after 2 years; \$7.80 after 4; \$19.50 after 6; \$7.80 after 8; \$11.70 after 10; \$7.80 after 12, 14 and 16; \$15.60 after 18 and 22 years.	E-3—\$17.63 after 2 years; \$15.60 after 4; \$7.80 after 6, 8 and 10; \$3.90 after 12 and 14 years.
E-5—\$18.56 after 2 years; \$19.50 after 4; \$7.80 after 6; \$11.70 after 8; \$7.80 after 10, 12, 14, 16 and 18; \$15.70 after 22 years.	E-2—\$15.60 after 2 years; \$7.80 after 4, 6, 8 and 10 years.
	E-1—\$15.60 after 2 years; \$7.80 after 4 years.*

* For first 4 months service, pay is based at \$78.00 a month, after that it is \$83.20.

Special Incentive Pay Rates

Members of the uniformed services are entitled to receive special pay for special kinds of duty. In addition to the incentive rates for aircraft and submarine crews listed on page 413, the following types of hazardous duty receive flat rates of \$110 per month for officers and \$55 per month for enlisted personnel.

1. Frequent and regular aerial flights not as a crew member.
2. Parachute jumping as a part of military duty.
3. Duty involving exposure to lepers.
4. Duty involving demolition of explosives.
5. Submarine escape training tank duty.
6. Deep sea diving duty (including helium-oxygen diving).
7. Human acceleration or deceleration duty.
8. Low pressure chamber duty.

Medical and Dental Officers

Monthly incentive pay for medical and dental officers is based on cumulative service: 0-2 years, \$100; 2-6 years, \$150; 6-10 years, \$200; over 10 years, \$250.

Diving as in Salvage and Repair

The monthly rate is not less than \$5 or more than \$30, plus \$5 for each diving hour spent in salvage or repair operations. Pay applies to pay grades E-1 through E-7 only.

Sea and Foreign Duty

Pay grade	Monthly rate	Pay grade	Monthly rate
E-7.....	\$22.50	E-3.....	\$9.00
E-6.....	20.00	E-2.....	8.00
E-5.....	16.00	E-1.....	8.00
E-4.....	13.00		

Arlington Cemetery

Arlington National Cemetery occupies 408 acres in Virginia on the Potomac River directly opposite Washington. This land was part of the estate of John Parke Custis, Martha Washington's son, who built the mansion which later became the home of Robert E. Lee. In 1864 Arlington became a national military cemetery. Many thousands of soldiers as well as hundreds of distin-

guished Americans are buried there. The Tomb of the Unknown Soldier was erected at Arlington as a tribute to unidentified dead of World War I. Plans have been made for the return and burial nearby on May 30, 1958 of unknown Americans who lost their lives during World War II and the Korean War.

Incentive Pay for Hazardous Duty (As an Aircraft or Submarine Crew Member)

Pay grade	Under 2 yrs.	Over 2 yrs.	Over 3 yrs.	Over 4 yrs.	Over 6 yrs.	Over 8 yrs.	Over 10 yrs.
O-8.....	\$155.00	\$155.00	\$165.00	\$165.00	\$165.00	\$165.00	\$165.00
O-7.....	150.00	150.00	160.00	160.00	160.00	160.00	160.00
O-6.....	200.00	200.00	215.00	215.00	215.00	215.00	215.00
O-5.....	190.00	190.00	205.00	205.00	205.00	205.00	205.00
O-4.....	170.00	170.00	185.00	185.00	185.00	195.00	210.00
O-3.....	145.00	145.00	155.00	165.00	180.00	185.00	190.00
O-2.....	115.00	125.00	150.00	150.00	160.00	165.00	170.00
O-1.....	100.00	105.00	135.00	135.00	140.00	145.00	155.00
W-4.....	115.00	115.00	115.00	115.00	120.00	125.00	135.00
W-3.....	110.00	115.00	115.00	115.00	120.00	120.00	125.00
W-2.....	105.00	110.00	110.00	110.00	115.00	120.00	125.00
W-1.....	100.00	105.00	105.00	105.00	110.00	120.00	125.00
E-7.....	80.00	85.00	85.00	85.00	90.00	95.00	100.00
E-6.....	70.00	75.00	75.00	80.00	85.00	90.00	95.00
E-5.....	60.00	70.00	70.00	80.00	80.00	85.00	90.00
E-4.....	55.00	65.00	65.00	70.00	75.00	80.00	80.00
E-3.....	55.00	60.00	60.00	60.00	60.00	60.00	60.00
E-2.....	50.00	60.00	60.00	60.00	60.00	60.00	60.00
E-1.....	50.00	55.00	55.00	55.00	55.00	55.00	55.00
Pay grade	Over 12 yrs.	Over 14 yrs.	Over 16 yrs.	Over 18 yrs.	Over 22 yrs.	Over 26 yrs.	Over 30 yrs.
O-8.....	\$165.00	\$165.00	\$165.00	\$165.00	\$165.00	\$165.00	\$165.00
O-7.....	160.00	160.00	160.00	160.00	160.00	160.00	160.00
O-6.....	215.00	215.00	220.00	245.00	245.00	245.00	245.00
O-5.....	210.00	225.00	230.00	245.00	245.00	245.00	245.00
O-4.....	215.00	220.00	230.00	240.00	240.00	240.00	240.00
O-3.....	200.00	205.00	205.00	205.00	205.00	205.00	205.00
O-2.....	180.00	185.00	185.00	185.00	185.00	185.00	185.00
O-1.....	160.00	170.00	170.00	170.00	170.00	170.00	170.00
W-4.....	145.00	155.00	160.00	165.00	165.00	165.00	165.00
W-3.....	135.00	140.00	140.00	140.00	140.00	140.00	140.00
W-2.....	130.00	135.00	135.00	135.00	135.00	135.00	135.00
W-1.....	130.00	130.00	130.00	130.00	130.00	130.00	130.00
E-7.....	105.00	105.00	105.00	105.00	105.00	105.00	105.00
E-6.....	95.00	100.00	100.00	100.00	100.00	100.00	100.00
E-5.....	95.00	95.00	95.00	95.00	95.00	95.00	95.00
E-4.....	80.00	80.00	80.00	80.00	80.00	80.00	80.00
E-3.....	60.00	60.00	60.00	60.00	60.00	60.00	60.00
E-2.....	60.00	60.00	60.00	60.00	60.00	60.00	60.00
E-1.....	55.00	55.00	55.00	55.00	55.00	55.00	55.00

Extra Pay for Wartime Service

Act of March 3, 1847, during the Mexican War, provided for \$2 a month extra pay for "distinguished service." This continued in force beyond the war and applied in the Civil War.

In the Spanish American War, there was a 20 per cent increase of enlisted men's pay for war service.

In World War I, additional pay was offered for all types of services, usually as incentive for special qualifications as gun pointer, expert rifleman, etc. Among these items is pay for certificate of merit of \$2 a month. By the new law passed in 1920, the number of reasons for additional pay had expanded. Recipients of the Medal of Honor, Distinguished Service Cross and Distinguished Service Medal received \$2 a month extra, while each bar in lieu of these medals also

added another \$2 a month. Added to this was a foreign service bonus of 20 per cent.

Act of June 30, 1944 authorized compensation of \$5 a month to enlisted men qualified as expert infantrymen and \$10 to those qualified as combat infantrymen. These amounts were payable for the duration of war and six months thereafter.

By the Act of July 6, 1945 for the duration of war and for six months thereafter enlisted men entitled to wear Medical Badges received additional pay of \$10.

Act of July 10, 1952 authorized \$45 a month for each month beginning after May 31, 1950, for which the member was entitled to receive basic pay and during which he was a member of a combat unit in Korea. This applies to officers and enlisted men.

ALLOWANCES FOR SUBSISTENCE

Officers receive \$47.88 per month. Enlisted personnel receive allowances for subsistence under the following provisions: (1) when rations in kind are not available, \$2.57 per day; (2) when permission to mess separately is granted, \$1.05 per day; (3) when assigned to duty under emergency conditions where no government messing facilities are available, up to and not to exceed \$3.42 per day.

U. S. Navy Combatant Vessels

Type	Number
Carriers (CVA).....	15
Light carriers and carrier escorts.....	9
Battleships.....	3
Cruisers.....	17
Destroyers and destroyer escorts.....	249
Submarines.....	110
Mine and patrol ships and auxiliaries.....	805
Total.....	1,208*

* Numbers are approximate; exact figures are classified information.

U. S. Casualties in Major Wars

Source: Department of Defense.

War	Branch of service	Numbers engaged	Battle deaths	Other deaths	Total deaths	Wounds not mortal	Total casualties ¹
Revolutionary War 1775 to 1783	Army	.....	4,044	.....	.....	6,004	.....
	Navy	.....	342	.....	.....	114	.....
	Marines	.....	49	.....	.....	70	.....
	Total	.....	4,435	.....	.....	6,188	.....
War of 1812 1812 to 1815	Army	.....	1,950	.....	.....	4,000	.....
	Navy	.....	265	.....	.....	439	.....
	Marines	.....	45	.....	.....	66	.....
	Total	286,730	2,260	.....	.....	4,505	.....
Mexican War 1846 to 1848	Army	.....	1,721	11,550	13,271	4,102	17,373
	Navy	.....	1	.....	.....	3	.....
	Marines	.....	11	.....	.....	47	.....
	Total	78,718	1,733	.....	.....	4,152	.....
Civil War ² 1861 to 1865	Army	2,128,948	138,154	221,374	359,528	280,040	639,568
	Navy	.....	2,112	2,411	4,523	1,710	6,233
	Marines	84,415	148	312	460	131	591
	Total	2,213,363	140,414	224,097	364,511	281,881	646,392
Spanish-American War 1898	Army	280,564	369	2,061	2,430	1,594	4,024
	Navy	22,875	10	0	10	47	57
	Marines	3,321	6	0	6	21	27
	Total	306,760	385	2,061	2,446	1,662	4,108
World War I 1917 to 1918	Army	4,057,101	50,510	55,868	106,378	193,663	300,041
	Navy	599,051	436	6,898	7,334	819	8,153
	Marines	78,839	2,461	390	2,851	9,520	12,371
	Total	4,734,991	53,407	63,156	116,563	204,002	320,565
World War II 1941 to 1945	Army ³	11,260,000	234,874	83,400	318,274	565,861	884,135
	Navy	4,183,466	39,379	25,664	65,043	37,778	102,821
	Marines	669,100	19,733	4,778	24,511	67,207	91,718
	Total	16,112,566	293,986	113,842	407,828	670,846	1,078,674
Korean War 1950 to 1953	Army	2,834,000	27,704	9,429	37,133	77,596	114,729
	Navy	1,177,000	458	4,043	4,501	1,576	6,077
	Marines	424,000	4,267	1,261	5,528	23,744	29,272
	Air Force	1,285,000	1,200	5,884	7,084	368	7,452
	Total	5,720,000	33,629	20,617	54,246	103,284	157,530

¹ Excludes captured or interned and missing in action who were subsequently returned to military control. ² Union forces only. Totals should probably be somewhat larger as data on disposition of prisoners are far from complete. ³ Army data include Air Force. NOTE: All data are subject to revision. For wars before World War I, information represents best data from available records. However, due to incomplete records and possible differences in usage of terminology, reporting systems, etc., figures should be considered estimates. Leaders (.....) indicate that information is not available.

Casualties in World War II

(U. S. figures are to be found on p. 414)

Country	Men in war	Battle deaths	Other deaths	Wounded	Still missing
Australia.....	1,000,000	26,951	6,875	180,864	(¹)
Austria.....	800,000	280,000	24,000	350,117	122,000
Belgium.....		8,460	40,564 ²		
Brazil ³	40,334	943	32	4,222	
Bulgaria.....		30,000 ³			
Canada.....	1,031,820	32,408	9,635	53,145	0
China ⁴		1,319,958		1,761,335	130,126
Czechoslovakia.....		6,683 ³		8,017	
Denmark.....		6,300 ³			
Finland.....	500,000	76,893	1,961		6,000
France.....		201,568	261,577	400,000	140,000
Germany.....	20,000,000	3,250,000 ³	3,350,000	7,250,000	1,300,000
Greece.....		17,024	391,000 ⁵	47,290	
Hungary.....		147,435		89,313	125,556
India.....	2,000,000	24,338 ³		64,354	
Italy.....	3,100,000	135,723	174,517		144,505
Japan.....	9,700,000	1,270,000	620,000	140,000	85,000
Netherlands.....		280,000 ³			
New Zealand.....	194,000	11,625 ³		17,000	46 ⁶
Norway.....	75,000	2,000	8,262		0
Poland.....		664,000	5,380,000	1,600,000	
Rumania.....	650,000 ⁷	350,000 ³			180,000
South Africa, Union of.....	302,128	6,840	4,005	14,363	1,841
U.S.S.R.....		6,115,000 ³		14,012,000	
United Kingdom.....	5,896,000	357,116 ³		369,267	46,079
Yugoslavia.....	3,741,000	305,000	1,401,000	425,000	

¹ Up-to-date figures not available; 2,475 in 1946. ² Also 20,000 Jews and non-Belgians living in Belgium. ³ Deaths from all causes. ⁴ Figures cover period July 7, 1937–Sept. 2, 1945, and concern only Chinese regular troops. They do not include casualties suffered by guerrillas and local military corps. ⁵ Includes 261,000 dead of starvation. ⁶ As of Dec. 31, 1946. ⁷ Against Soviet Russia; 385,847 against Nazi Germany. ⁸ Against Soviet Russia; 169,822 against Nazi Germany. Figures include all deaths, wounded, and missing. ⁹ Army and Navy figures.

U. S. Armed Forces Personnel

Source: U. S. Department of Defense.

Year	Army*	Air Force*	Navy	Marines	Coast Guard†	Men‡	Women
1934.....	137,584		92,312	16,361	9,985	245,299	958
1935.....	138,569		95,053	17,260	10,303	249,947	935
1936.....	166,724		106,292	17,248	9,545	289,311	953
1937.....	178,733		113,617	18,223	10,066	309,556	1,017
1938.....	184,126		119,088	18,356	9,968	320,472	1,098
1939.....	188,565		125,202	19,432	10,064	332,089	1,110
1940.....	267,767		160,997	28,277	13,621	455,660	1,381
1941.....	1,460,998		284,427	54,359	19,036	1,793,680	6,104
1942.....	3,074,184		640,570	142,613	58,998	3,902,112	14,253
1943.....	6,993,102		1,741,750	308,523	154,976	9,068,994	129,357
1944.....	7,992,868		2,981,365	475,604	169,264	11,400,450	218,651
1945.....	8,266,373		3,380,817	474,680	171,518	12,018,974	274,414
1946.....	1,889,690		983,398	155,592	29,736	2,970,688	57,992
1947.....	989,664		498,661	92,222	18,972	1,548,472	19,659
1948.....	552,239	387,730	405,789	83,609	19,929	1,415,216	14,151
1949.....	658,694	419,347	448,500	86,000	23,326	1,594,481	18,060
1950.....	593,167	411,277	381,538	74,279	23,190	1,438,206	22,055
1951.....	1,552,000	850,000	740,000	204,000	29,000	3,420,000	40,000
1952.....	1,653,000	939,000	801,000	237,000	34,000	3,624,703	45,964
1953.....	1,533,815	977,593	794,440	249,219	34,148	3,543,730	45,512
1954.....	1,404,598	947,918	725,720	214,797	28,444	3,291,948	38,622
1955.....	1,109,296	950,946	660,695	205,170	28,500	2,935,107	35,191
1956.....	1,025,778	909,958	669,925	200,780	30,000	2,802,795	33,646

* Prior to July 26, 1917, when the National Military Establishment was established, the Air Force was a part of the Army. † Not including the men in the Coast Guard during peacetime. ‡ From 1942 to and including 1945, the Coast Guard was part of the Navy; in peacetime it is attached to the Treasury Department.

Casualties in World War I

Source: Department of Defense.

(U. S. figures are to be found on p. 414)

	Total mobilized forces	Killed or died ¹	Wounded	Prisoners or missing	Total casualties
Austria-Hungary.....	7,800,000	1,200,000	3,620,000	2,200,000	7,020,000
Belgium.....	267,000	13,716	44,686	34,659	93,061
British Empire ²	8,904,467	908,371	2,090,212	191,652	3,190,235
Bulgaria.....	1,200,000	87,500	152,390	27,029	266,919
France ²	8,410,000	1,357,800	4,266,000	537,000	6,160,800
Germany.....	11,000,000	1,773,700	4,216,058	1,152,800	7,142,558
Greece.....	230,000	5,000	21,000	1,000	27,000
Italy.....	5,615,000	650,000	947,000	600,000	2,197,000
Japan.....	800,000	300	907	3	1,210
Montenegro.....	50,000	3,000	10,000	7,000	20,000
Portugal.....	100,000	7,222	13,751	12,318	33,291
Rumania.....	750,000	335,706	120,000	80,000	535,706
Russia.....	12,000,000	1,700,000	4,950,000	2,500,000	9,150,000
Serbia.....	707,343	45,000	133,148	152,958	331,106
Turkey.....	2,850,000	325,000	400,000	250,000	975,000

¹ Includes deaths from all causes. ² Official figures.

Veterans' Benefits

Veterans of World War I were the first in our history to receive compensation for injuries, allotments for the support of dependents, life insurance, medical care and vocational rehabilitation. Beginning with 1940, these benefits were slowly broadened.

The following benefits available to veterans of World War II and the Korean War have specific time limitations and, in most cases, are applicable only to those whose discharge was not under dishonorable conditions.

Education and Training: *Veterans of the Korean War:* For a maximum period of 1½ times the duration of active service, not exceeding 36 months, the VA pays sums varying from \$110 to \$160 per month toward subsistence, tuition, supplies, etc.

Re-employment: The veteran is to be reinstated in the same position or an equivalent one unless, in the case of a private employer, changed circumstances make this impossible.

Unemployment allowances: Korea veterans out of work are entitled to unemployment allowances of \$26 a week for up to 26 weeks. Application should be made to the local state employment office.

Loans: Only loans for the purchase or construction of a home, to buy a farm and farm equipment or business property and equipment, are permissible. The VA will guarantee the lender against loss up to 60% of a home loan with a maximum of \$7,500. On other loans, the guarantee is up to 50% with a maximum of \$4,000 involving real estate and \$2,000 on non-real estate loans. The interest rate in all cases must not exceed 4½% per year.

The following benefits are also available to those having some service-connected illness or disability:

Disability Compensation: The VA pays from \$19 to \$225 per month with additional sums for specific conditions up to \$450 per month, plus allowances for wife, children or dependent parents.

Vocational rehabilitation: Necessary training expenses, special equipment, etc., toward a definite job objective are paid for, plus a monthly allowance varying from \$65 to \$120 in addition to compensation.

Medical and dental care: This includes complete care in VA or certain other Federal hospitals. It also covers treatment (not requiring hospitalization) at a VA field station or by an approved private physician or dentist. Medicine, instruments, appliances, mechanical equipment, etc., are supplied. Full domiciliary care is also provided where necessary.

War Orphans Education: \$110 a month for up to 36 months of schooling may be paid to sons and daughters of veterans who died of service-connected causes. Students must usually be between 18 and 23.

Death benefits: Up to \$10,000 of GI Insurance may be paid to the beneficiaries of deceased veterans. Compensation to a widow is \$75 per month, with an allowance for each child.

NOTE: Since our space has permitted only a general statement of the principal benefits available to veterans, the reader is referred to his local office of the Veterans' Administration (VA) for detailed information.

U. S. Postal Regulations

Source: U. S. Post Office.

FIRST CLASS:

Letters and written and sealed matter: 3¢ for each oz., except that drop letters are subject to 2¢ for each oz. when deposited for local delivery at offices not having letter-carrier service, provided they are not collected or delivered by rural or star-route carriers.

Government postal cards: single, 2¢; double, 4¢.

Private mailing or post cards: 2¢.

Limit of size: Min. size, $2\frac{3}{4}$ " x 4"; no max.

Limit of weight when mailed from one first-class post office to another: 40 lb. in local, first and second zones, 20 lb. in third to eighth zones.

Limit of weight when mailed to or from second-, third- and fourth-class post offices: 70 lb.

AIRMAIL (LIMIT 8 OZ.):

6¢ for each oz. or fraction thereof within the continental U. S., within any Territory or possession of the U. S., or between any of the foregoing. This includes airmail to or from Alaska, Hawaii, Puerto Rico, Virgin Islands of the U. S., Canton Island, Canal Zone, Guam and any other place where the U. S. mail service is in operation.

Post cards: 4¢.

AIR PARCEL POST (OVER 8 OZ. TO 70 LB.):

The zone rates below shall apply to mailable matter of any class carried by air. Such matter shall not exceed 100 in. in length and girth combined, including written and other matter of the first class, whether sealed or unsealed. Fractions of a lb. are charged as a full lb.

Parcels weighing less than 10 lb. and measuring more than 84 in., but not more than 100 in. in length and girth combined, shall be subject to the 10-lb. rate.

Air Parcel-Post Zone Rates

Zone and (miles)	First lb.	Addl. lbs.
First, Second & Third (to 300) .	60¢	48¢
Fourth (300-600)	65¢	50¢
Fifth (600-1,000)	70¢	56¢
Sixth (1,000-1,400)	75¢	64¢
Seventh (1,400-1,800)	75¢	72¢
Eighth (over 1,800)	80¢	80¢

The eighth-zone rate shall be charged on air parcel post between the U. S. or its Territories and possessions and overseas A.P.O.'s and Fleet post offices, as well as naval vessels and commands afloat addressed in care of Fleet post offices at New York or San Francisco.

Limit of size to A.P.O. or F.P.O.: 30 in. length and girth; limit of weight: 2 lb.

Air parcels mailed at New York, N. Y., and addressed to Puerto Rico and the Virgin Is. are subject to the seventh-zone rate.

SECOND CLASS (NO WEIGHT LIMIT):

Newspapers, magazines and other periodicals containing notice of second-class entry.

For rates for publications mailed by the publishers or registered news agents, consult local postmaster.

Transient rate for matter mailed by others than the publishers or registered news agents: 2¢ for the first 2 oz., 1¢ for each additional 2 oz. However, if the fourth-class rate is cheaper, it shall apply.

THIRD CLASS (LIMIT 8 OZ.):

Merchandise, books, printed matter and all other mailable matter not in first or second class.

Regular rate: 2¢ for the first 2 oz., 1¢ for each additional oz. Books and catalogs of 24 pages or more, seeds, cuttings, bulbs, etc.: 2¢ for the first 2 oz., $1\frac{1}{2}$ ¢ for each additional 2 oz.

Bulk rate: for \$10 per year or fraction thereof, separately addressed identical pieces of third-class matter in quantities of not less than 20 lb. or of not less than 200 pieces are subject to the lb. rates of postage applicable to the entire bulk mailed at one time.

The bulk rate for miscellaneous printed matter, etc. is 14¢ for each lb., with a minimum charge of $1\frac{1}{2}$ ¢ per piece. For books and catalogs of 24 pages or more, seeds, etc., the rate is 10¢ for each lb., with a minimum charge of $1\frac{1}{2}$ ¢ per piece.

Pieces of such size or form as to prevent ready facing and tying in bundles and requiring individual distributing throughout mailed singly or in bulk are subject to a minimum charge of 3¢ each.

FOURTH CLASS (PARCEL POST) (OVER 8 OZ.):

Merchandise, books, printed matter and all other mailable matter not in first, second or third classes.

The zone rates below shall apply to fourth-class matter, except catalogs, books, library books, publications or records for the blind, and certain controlled circulation publications.

Limit of size*: 72 in. in length and girth combined.

Limit of weight*: over 8 oz. to 40 lb. in local, first and second zones, over 8 oz. to 20 lb. in third to eighth zones.

Note: The following five items have a size limit of 100 in. in length and girth

* When mailed from one first-class post office to another.

combined, a weight limit of over 8 oz. to 70 lb.: (1) parcels sent to or from rural or star routes; (2) parcels sent to or from second-, third-, and fourth-class post offices; (3) parcels containing baby fowl, live plants, trees, shrubs, or agricultural commodities (not including manufactured products thereof); (4) parcels containing books; (5) parcels mailed between the U. S. and any Army or Fleet post office or between the U. S. and any Territory or possession of the U. S.

Fourth-Class Zone Rates

Zone and (miles)	First lb.	Addl. lbs.
Local	\$.18	\$.0145
First & Second (to 150) *	.23	.0395
Third (150-300)	.23	.0515
Fourth (300-600)	.24	.0690
Fifth (600-1,000)	.26	.0925
Sixth (1,000-1,400)	.28	.1195
Seventh (1,400-1,800)	.30	.1520
Eighth (over 1,800)	.32	.1805

* In the 1st or 2nd zone, where the distance by the shortest practicable mail route is 300 mi. or more, the rate shall be the same as for the 3rd zone.

The zone rates below shall apply to individually addressed catalogs and similar printed advertising matter in bound form weighing more than 8 oz. but not exceeding 10 lb.

Catalog Zone Rates*

Zone and (miles)	First lb.	Addl. half-lbs.
Local	\$.12	\$.0075
First & Second (to 150)†	.13	.0150
Third (150-300)	.14	.0200
Fourth (300-600)	.15	.0250
Fifth (600-1,000)	.17	.0325
Sixth (1,000-1,400)	.18	.0400
Seventh (1,400-1,800)	.19	.0500
Eighth (over 1,800)	.20	.0600

* Fractions of one-half cent or less are counted as one-half cent; fractions of a cent exceeding one-half cent are counted as one cent in the total amount.

† In the 1st or 2nd zone, where the distance by the shortest practicable mail route is 300 mi. or more, the rate shall be the same as for the 3rd zone.

BOOKS (LIMIT 70 LB.):

Books (containing no advertising matter other than incidental announcements of books), 16-mm. film in final state for viewing and 16-mm. film catalogs: 8¢ first lb., 4¢ each additional lb. (Rate applies for films and catalogs except when mailed to commercial theaters.) Must be endorsed "book."

LIBRARY BOOKS (LIMIT 70 LB.):

Books sent by authorized libraries to readers and when returned by such readers, for delivery within the first three zones or the state in which mailed: 4¢ first lb., 1¢ each additional lb.

SPECIAL DELIVERY AND SPECIAL HANDLING:

The prepayment of the special-delivery

fee entitles mail to the most expeditious handling and special delivery.

Prepayment of the special-handling fee entitles fourth-class matter to the most expeditious handling, transportation and delivery possible, but not special delivery.

Special Delivery and Special Handling

Weight	Special delivery			Special handling (4th class only)
	First class*	2nd, 3rd, 4th class		
Up to 2 lb.	30¢	45¢		25¢
2 to 10 lb.	45¢	55¢		35¢
Over 10 lb.	60¢	70¢		50¢

* Including air parcel post.

MONEY ORDERS:

Money orders for amounts from 1¢ to \$100 are issued upon written application* made by the remitter or his agent showing the amount of the order and the names and addresses of payee and remitter.

Amount of order	Fee
\$.01 to \$ 5.00	15¢
5.01 to 10.00	20¢
10.01 to 100.00	30¢

* As of Oct. 1, 1955, 1st- and 2nd-class post offices will issue money orders without written application.

REGISTERED MAIL:

Fees for domestic registered mail (first-, second- and third-class matter, and sealed fourth-class matter on which postage at the first-class rate has been paid):

Declared value (must be full value)	Fee if mailer has no commercial or other insurance	Fee if mailer has commercial or other insurance
\$ 0.00 to \$ 10.00	\$.50 ¹	\$.50 ²
10.01 to 100.00	.75 ¹	.75 ²
100.01 to 200.00	1.00 ¹	1.00 ²
200.01 to 400.00	1.25 ¹	1.25 ²
400.01 to 600.00	1.50 ¹	1.50 ²
600.01 to 800.00	1.75 ¹	1.75 ²
800.01 to 1,000.00	2.00 ¹	2.00 ²
1,000.01 to 2,000.00	2.25 ¹	2.15 ³
2,000.01 to 3,000.00	2.50 ¹	2.30 ³
3,000.01 to 4,000.00	2.75 ¹	2.45 ³
4,000.01 to 5,000.00	3.00 ¹	2.60 ³
5,000.01 to 6,000.00	3.25 ¹	2.75 ³
6,000.01 to 7,000.00	3.50 ¹	2.90 ³
7,000.01 to 8,000.00	3.75 ¹	3.05 ³
8,000.01 to 9,000.00	4.00 ¹	3.20 ³
9,000.01 to 10,000.00	4.25 ¹	3.35 ³
10,000.01 to 1,000,000.00	4.25 + ^{4,5}	3.35 + ^{5,6}
1,000,000.01 to 15,000,000.00	152.75 + ^{4,5}	151.85 + ^{5,6}
Over 15,000,000.00	(^{4,7})	(^{5,7})

¹ Postal liability: declared value. ² Postal liability: Declared value or prorated. ³ Postal liability: \$1,000 maximum or prorated. ⁴ Postal liability: \$10,000. ⁵ Fee increased 15 cents per \$1,000 or fraction above \$10,000. ⁶ Fee increased 10 cents per \$1,000 or fraction above \$1,000,000. ⁷ Additional fee charges may be applied based on consideration of weight, space and value.

Restricted delivery, 50¢. Return receipts: showing to whom and when delivered, 10¢; to whom, when and address where delivered, 35¢; requested after mailing, showing to whom and when delivered, 25¢.

CERTIFIED MAIL:

Certified mail service provides for a receipt to the sender and a record of delivery at the office of address. No record is kept at the office where mailed. It is handled in the ordinary mails and no insurance coverage is provided.

Only first-class mail having no value will be accepted as certified mail. This does not exclude articles of a non-negotiable character and other matter which would involve a cost of duplication if lost or destroyed. The mail may be sent by air on payment of the required postage. Return receipt service requested at the time of mailing only, and special delivery service are available.

Fees are as follows: Fee in addition to postage, 20¢; return receipt showing to whom and when delivered, 10¢; return receipt showing to whom, when, and address where delivered, 35¢; restricted delivery, 50¢.

INSURED MAIL:

Fees for domestic insured mail (third- and fourth-class matter):

Insurance coverage	Fee
\$ 0.00 to \$ 10.00	10¢
10.01 to 50.00	20¢
50.01 to 100.00	30¢
100.01 to 200.00	40¢

C.O.D. MAIL:

Fees for domestic unregistered C.O.D. mail (third- and fourth-class matter and sealed domestic mail matter of any class bearing postage at the first-class rate):

Indemnity limit	Fee
\$.01 to \$ 5.00 .....	.30
5.01 to 10.00 .....	.40
10.01 to 25.00 .....	.60
25.01 to 50.00 .....	.70
50.01 to 100.00 .....	.80
100.01 to 150.00 .....	.90
150.01 to 200.00	1.00

Fees for domestic registered C.O.D. mail (sealed domestic mail of any class bearing postage at the first-class rate):

Amount collectible and indemnity payable	Fee
\$.01 to \$ 10.00 .....	.80
10.01 to 50.00	1.10
50.01 to 100.00	1.20
100.01 to 200.00*	1.40

* Limit of collections.

When indemnity in excess of \$200 is desired, the fees for domestic registered C.O.D. mail are:

Indemnity limit	Fee
\$200.01 to \$ 300.00	\$1.50
300.01 to 400.00	1.60
400.01 to 500.00	1.70
500.01 to 600.00	1.80
600.01 to 700.00	1.90
700.01 to 800.00	2.00
800.01 to 1000.00	2.10

MISCELLANEOUS:

In registered and insured mail, a receipt card will be returned to the sender upon request. When a card is requested showing to whom and when the delivery was made, the rate is 10¢ if the request is made at the time of mailing, 25¢ if made thereafter. When a card is requested showing to whom and when the delivery was made and the address, the rate is 35¢ and must be paid at the time of mailing.

Fees for effecting delivery of domestic registered, insured, and C.O.D. mail to addressee only or to addressee or order: 50¢.

Fee for notifying sender or his representative of inability to deliver a C.O.D. article: 5¢.

Certificates of mailing for ordinary mail of any class: 5¢ for each article described thereon. Additional certificates for ordinary, registered, insured and C.O.D. mail: 2¢ for each article described thereon.

C.O.D. mail cannot be sent to Navy personnel on board ships or at overseas shore stations.

FOREIGN REGULAR MAIL:

Letters and letter packages: To Canada and Mexico, 3¢ per oz. or fraction. To all other countries, 8¢ for 1st oz., 4¢ per additional oz. or fraction. Weight limit: 4 lb. 6 oz. (60 lb. to Canada).

Post cards: To Canada and Mexico, 2¢ each, 4¢ with reply paid. To all other countries, 4¢ each, 8¢ with reply paid.

FOREIGN AIRMAIL:

Air-letter sheets: Air letters, consisting of sheets which can be folded into the form of an envelope and sealed, are acceptable for dispatch by airmail at a uniform rate of 10¢ each to all foreign countries. The sheets are sold at all post offices at 10¢ each. No enclosures, adhesive tape or stickers are permitted.

Letters and letter packages: See table for rates.

Airmail Rates from U. S. to Selected Countries

Country	Air-mail ¹	Air parcel post			Country	Air-mail ¹	Air parcel post		
		Initial unit ²	Addl. weight ³	Limit, lbs.			Initial unit ²	Addl. weight ³	Limit, lbs.
Albania.....	\$.15	....	....	..	Indonesia.....	\$.25	\$1.75	\$1.00	11
Algeria.....	.15	....	....	..	Iran.....	.25	1.47	.72	44
Argentina.....	.10	\$1.51	\$.76	44	Iraq.....	.25	1.47	.72	44
Australia.....	.25	1.62	1.27	22	Ireland.....	.15	.97	.37	22
Austria.....	.15	1.05	.49	22	Israel.....	.25	1.42	.67	22
Bahamas.....	.10	.83	.14	22	Italy.....	.15	1.08	.50	44
Belgium.....	.15	.98	.43	44	Jamaica.....	.10	.95	.18	22
Bermuda.....	.10	.76	.13	22	Japan.....	.25	1.27	.91	22
Bolivia.....	.10	1.08	.40	44	Jordan.....	.25	....	....	..
Brazil.....	.10	1.48	.64	44 ⁴	Korea, Rep. of.....	.25	1.37	1.01	22
British Guiana.....	.10	1.07	.39	22	Lebanon.....	.25	1.22	.64	44 ¹³
British Honduras.....	.10	.80	.20	22	Liberia.....	.25	.86	.56	22
Bulgaria.....	.15	....	....	..	Mexico.....	.06 ⁶	.64	.18	44
Burma.....	.25	....	....	..	Morocco.....	.15	1.19	.54	44
Canada ^{5, 6}.....	.06	....	....	..	Netherlands.....	.15	.89	.44	44
Ceylon.....	.25	1.75	1.00	22	New Zealand.....	.25	1.82	1.17	22
Chile.....	.10	1.31	.56	22	Nicaragua.....	.10	.80	.29	44
China ⁷.....	.25	1.43 ⁸	1.08	44	Norway.....	.15	1.02	.47	44
Colombia.....	.10	1.21	.40	44	Pakistan.....	.25	1.63	.84	22
Costa Rica.....	.10	.79	.29	44	Panamá.....	.10	.91	.21	44
Cuba.....	.10	(⁹)	(⁹)	22	Paraguay.....	.10	1.00	.50	44
Czechoslovakia.....	.15	.88	.48	44	Peru.....	.10	1.23	.37	44
Denmark.....	.15	.97	.47	44	Philippines.....	.25	1.81	1.26	44 ⁸
Dominican Republic.....	.10	.86	.22	44	Poland.....	.15	1.06	.52	44
Ecuador.....	.10	1.24	.33	44	Portugal.....	.15	.71	.44	22
Egypt.....	.15	1.35	.64	22	Rumania.....	.15	....	....	..
El Salvador.....	.10	1.02	.26	44	Saudi Arabia.....	.25	1.60 ¹¹	.80 ¹¹	22 ¹¹
Ethiopia.....	.25	....	....	..	Spain.....	.15	1.25	.50	22
Finland.....	.15	.88	.51	44	Surinam.....	.10	.92	.41	44
France.....	.15	1.22	.44	44	Sweden.....	.15	.85	.49	44
French Guiana.....	.10	.79	.44	11	Switzerland.....	.15	.92	.46	44
Germany.....	.15	.95	.45	44	Syria.....	.25	1.22	.64	44 ¹²
Greece.....	.15	1.07	.57	22	Thailand.....	.25	2.29	1.50	22
Guatemala.....	.10	1.01	.25	44	Turkey.....	.15	1.15	.57	44
Haiti.....	.10	.72	.21	44	U. of S. Africa.....	.25	1.31	.94	11
Honduras, Rep. of.....	.10	.78	.28	44 ¹⁰	U.S.S.R.....	.15	1.66	.63	22
Hong Kong.....	.25	1.74	1.39	22	United Kingdom.....	.15	1.00	.41	22
Hungary.....	.15	....	....	..	Uruguay.....	.10	1.26	.76	44
Iceland.....	.15	.89	.33	44	Venezuela.....	.10	1.27	.36	44
India.....	.25	1.70	.96	22	Yugoslavia.....	.15	.87	.52	44

¹ For letters and letter packages. Unless otherwise indicated, rate shown is per each $\frac{1}{2}$ oz., and weight is limited to 4 lb., 6 oz. For rates for commercial papers, printed matter, samples of merchandise, small packages, 8-oz. merchandise packages, combination packages and articles grouped together, consult local postmaster. ² Rate for 4 oz. or fraction thereof. ³ Rate for each additional 4 oz. or fraction thereof. ⁴ Parcels for Brazil exceeding 22 lb. accepted for following offices only: Belem (Para), Belo Horizonte, Florianopolis, Fortaleza, Manaus, Pelotas, Porto Alegre, Recife (Pernambuco), Rio de Janeiro, Rio Grande (Rio Grande do Sul), Salvador (Bahia), Santos and Sao Paulo. ⁵ Per oz.; post cards each 4c. ⁶ Articles limited to 60 lb. in weight. ⁷ Registered and ordinary articles in regular mails for Island of Formosa (Taiwan) will be accepted for air transmission to destination. ⁸ Parcels for many offices are limited to 22 lb. or 7 lb. Consult local postmaster for limitations. ⁹ Service to Cuba is limited to parcels weighing over 8 oz. and up to 22 lb. Cost for initial weight unit, which is over 8 oz. and up to 12 oz., is \$1.10. Each additional 4 oz. or fraction is 15c. Packages weighing 8 oz. or less must not have customs declarations or parcel post stickers attached. ¹⁰ Parcels for Honduras exceeding 22 lb. accepted for following offices only: Amapala, Comayagua, La Kelba, Olanchito, Progreso, Puerto Castilla, Puerto Cortez, San Pedro Sula, Tegucigalpa and Tela. ¹¹ Air parcels for Saudi Arabia limited to the following places only: Al Gaba, Al Lih, Al Weh, Daba, Danmam, Dhahran, Hassa, Jiddah, Jizam, Katif, Khobar, Mecca, Medina, Qunfda, Rabigh, Rastanurra, Rivadh, Umm Lej and Yenbo. ¹² Limit to Chahba and Sakhad is 11 lb.; limit to Tel-Abiad and Yabroud is 22 lb. ¹³ Parcels for Lebanon exceeding 11 lb. not accepted for following offices: Ain-Zhalta, Baido, Falougha, Hermel, Koubayat, Maaser-el-Chour, Ras-Baalbeck and Souk-el-Gharb. NOTE: For rates to countries not shown in this table, consult local postmaster. Leaders (....) indicate that there is no air-parcel-post service to the country.

HOW A PRESIDENT IS ELECTED

Selection of Delegates

FIRST, AT FULL DRESS MEETINGS several months before, the national committees decide the time and place of the conventions. Before the conventions meet, each party selects delegates from every state and territory.

Democrats allow 2 delegates with 1 vote apiece for each Senator, or 4 delegates with $\frac{1}{2}$ vote apiece. Two delegates are allowed for each Congressman. Also, a bonus vote of 4 is allowed each state that went Democratic in the last Presidential election. These states may elect 8 delegates with $\frac{1}{2}$ vote each. Six delegates each are allowed to Puerto Rico, D. C., Alaska, and Hawaii, and 2 each to the Canal Zone and the Virgin Islands.

Republicans allow each state 4 delegates-at-large and 2 for each Representative-at-large, as well as 6 additional delegates if the state went Republican in the previous Presidential election or, in that election or a subsequent one held prior to the next Republican National Convention, elects a Republican U. S. Senator or Governor. In addition, each Congressional district within the state that cast 2,000 Republican votes at the last election is permitted a delegate, with an additional delegate if that district cast 10,000 votes. Republicans further allow 4 delegates-at-large for Alaska, 6 for D. C., 6 for Hawaii (plus 4 for having elected a Delegate to Congress), 3 for Puerto Rico and 1 for the Virgin Islands.

Each party provides for the selection of an equal number of alternates to serve in the absence of the regular delegates. Delegates are chosen differently in the different states.

The Conventions

At each convention a temporary chairman is chosen, usually to deliver the party's keynote speech. After a credentials committee seats the various delegates, a permanent chairman is elected. The convention then votes on a platform, drawn up by the platform committee.

By the third or fourth day, Presidential nominations begin. The chairman calls the roll of states alphabetically. A state may place a candidate in nomination or yield to another state.

Voting, again alphabetically by voice vote, begins after all nominations have been made and seconded. A simple majority is required in each party, although this may require many ballots.

Finally, the Vice Presidential candidate is selected. Although there is no law saying that the candidates *must* come from different states, it is practically necessary for this to be the case. Otherwise, accord-

ing to the Constitution (see Amendment XII), electors from that state could vote for only one of the candidates and would have to cast their other vote for some person of another state. This could result in the awkward situation of a Presidential candidate's receiving a majority electoral vote and his running mate's failing to.

The Electoral College

The next step in the process is the nomination of electors in each state, according to its laws. These electors must not be Federal office holders. In the November election, the voters cast their votes for electors, not for President. In some states, the ballots include only the names of the Presidential and Vice Presidential candidates; in others, they include only names of the electors. Nowadays, it is rare for electors to be split between parties. The last such occurrence was in Tennessee in 1948; the last before that, in West Virginia in 1916. On three occasions (1824, 1876 and 1888), the candidate with the largest popular vote failed to obtain an electoral-vote majority.

Each state has as many electors as it has United States Senators and members of the House of Representatives. There are 96 Senators and 435 Representatives, a total of 531 electoral votes, of which 266 are needed to win.

On the first Monday after the second Wednesday in December, the electors cast their votes in their respective state capitols. Constitutionally they may vote for someone other than the party candidate but practically they cannot since they are pledged to one party and its candidate on the ballot. Should the Presidential or Vice-Presidential candidate die between the November election and the December meetings, the electors pledged to vote for him could vote for whomever they pleased. However, it seems certain that the national committee would attempt to get an agreement among the state party leaders for a replacement candidate.

The votes of the electors, certified by the states, are sent to Congress, where the president of the Senate opens the certificates and has them counted in the presence of both Houses on January 6. The new President is inaugurated at noon on January 20.

Should no candidate receive a majority of the electoral vote for President, the House of Representatives chooses a President from among the three highest candidates, voting, not as individuals, but as states, with a majority (now 25) needed to elect. Should no Vice Presidential candidate obtain the majority, the Senate, voting as individuals, chooses from the highest two.

U. S. National Conventions Since 1856

Opening date	Party	Where held	Presidential nominee	Vote
June 17, 1856	R	Philadelphia	John C. Frémont	520
June 2, 1856	D	Cincinnati	James Buchanan	296
May 16, 1860	R	Chicago	Abraham Lincoln	364
April 23, 1860	D	Charleston & Baltimore	S. A. Douglas	181
June 7, 1864	R ¹	Baltimore	Abraham Lincoln	Unanimous
Aug. 29, 1864	D	Chicago	Geo. B. McClellan	202½
May 20, 1868	R	Chicago	U. S. Grant	Unanimous
July 4, 1868	D	New York City	Horatio Seymour	Unanimous
June 5, 1872	R	Philadelphia	U. S. Grant	Unanimous
June 9, 1872	D	Baltimore	Horace Greeley	688
June 14, 1876	R	Cincinnati	R. B. Hayes	384
June 28, 1876	D	St. Louis	S. J. Tilden	508
June 2, 1880	R	Chicago	J. A. Garfield	399
June 23, 1880	D	Cincinnati	W. S. Hancock	705
June 3, 1884	R	Chicago	J. G. Blaine	541
July 11, 1884	D	Chicago	Grover Cleveland	683
June 19, 1888	R	Chicago	Benjamin Harrison	544
June 6, 1888	D	St. Louis	Grover Cleveland	By acclamation
June 7, 1892	R	Minneapolis	Benjamin Harrison	535⅓
June 21, 1892	D	Chicago	Grover Cleveland	617½
June 16, 1896	R	St. Louis	William McKinley	661½
July 7, 1896	D	Chicago	William J. Bryan	500
June 19, 1900	R	Philadelphia	William McKinley	Unanimous
July 4, 1900	D	Kansas City	William J. Bryan	By acclamation
June 21, 1904	R	Chicago	Theodore Roosevelt	Unanimous
July 6, 1904	D	St. Louis	Alton B. Parker	678
June 16, 1908	R	Chicago	William H. Taft	702
July 7, 1908	D	Denver	William J. Bryan	892½
June 18, 1912	R	Chicago	William H. Taft	561
June 25, 1912	D	Baltimore	Woodrow Wilson	990
June 7, 1916	R	Chicago	Charles E. Hughes	949½
June 14, 1916	R	St. Louis	Woodrow Wilson	By acclamation
June 8, 1920	R	Chicago	Warren G. Harding	692⅓
June 28, 1920	D	San Francisco	James M. Cox	732½
June 10, 1924	R	Cleveland	Calvin Coolidge	1,065
June 24, 1924 ^a	D	New York City	John W. Davis	839 ^a
June 12, 1928	R	Kansas City	Herbert Hoover	837
June 26, 1928	D	Houston	Alfred E. Smith	849½
June 14, 1932	R	Chicago	Herbert Hoover	1,126½
June 27, 1932	D	Chicago	F. D. Roosevelt	945
June 9, 1936	R	Cleveland	Alfred M. Landon	984
June 23, 1936	D	Philadelphia	F. D. Roosevelt	By acclamation
June 24, 1940	R	Philadelphia	Wendell L. Willkie	Unanimous
July 15, 1940	D	Chicago	F. D. Roosevelt	Unanimous
June 26, 1944	R	Chicago	Thomas E. Dewey	1,056
July 19, 1944	D	Chicago	F. D. Roosevelt	1,086-90
June 21, 1948	R	Philadelphia	Thomas E. Dewey	1,094-0
July 12, 1948	D	Philadelphia	Harry S. Truman	947½-263½
July 17, 1948	(⁴)	Birmingham	J. Strom Thurmond	By acclamation
July 22, 1948	(⁵)	Philadelphia	Henry A. Wallace	By acclamation
July 7, 1952	R	Chicago	Dwight D. Eisenhower	845-361
July 21, 1952	D	Chicago	Adlai E. Stevenson	By acclamation
Aug. 13, 1956	D	Chicago	Adlai E. Stevenson	By acclamation
Aug. 20, 1956	R	San Francisco	Dwight D. Eisenhower	Unanimous

¹ The Convention adopted the name Union party so as to attract War Democrats and others favoring prosecution of the war. ² In session until July 10, 1924. ³ 103d ballot. ⁴ States' Rights delegates from 13 Southern states. ⁵ Progressive party.

Presidential Succession

The following is the order of the succession to the Presidency. No person may become President, however, unless he is eligible under the Constitution.

1. Vice President of the U. S.
2. Speaker of the House.
3. President pro tempore of the Senate.
4. Secretary of State.
5. Secretary of the Treasury.
6. Secretary of Defense.
7. Attorney General.
8. Postmaster General.
9. Secretary of the Interior.
10. Secretary of Agriculture.
11. Secretary of Commerce.
12. Secretary of Labor.

Presidential Elections, 1789 to 1956

Year	Presidential candidates	Party	Electoral vote	Year	Presidential candidates	Party	Electoral vote
1789 ^{1,2}	George Washington	(no party)	69	1796 ¹	John Adams	Federalist	71
	John Adams	(no party)	34		Thomas Jefferson	Dem.-Rep.	68
	Scattering	(no party)	35		Thomas Pinckney	Federalist	59
	Votes not cast		8		Aaron Burr	Dem.-Rep.	30
1792 ¹	George Washington	Federalist	132	1800 ^{1,3}	Scattering		48
	John Adams	Federalist	77		Thomas Jefferson	Dem.-Rep.	73
	George Clinton	Anti-Federalist	50		Aaron Burr	Dem.-Rep.	73
	Thomas Jefferson	Anti-Federalist	4		John Adams	Federalist	65
	Aaron Burr	Anti-Federalist	1		Charles C. Pinckney	Federalist	64
	Votes not cast		6		John Jay	Federalist	1

¹ For the original method of electing the President and the Vice President, see Article II, Section 1, of the Constitution. ² Only 10 states participated in the election. The New York legislature chose no electors, and North Carolina and Rhode Island had not yet ratified the Constitution. ³ As Jefferson and Burr were tied, the House of Representatives chose the President. In a vote by states, 10 votes were cast for Jefferson, 4 for Burr; 2 votes were not cast.

Year	Presidential candidates	Party	Electoral vote	Vice-presidential candidates	Party	Electoral vote
1804 ¹	Thomas Jefferson	Dem.-Rep.	162	George Clinton	Dem.-Rep.	162
	Charles C. Pinckney	Federalist	14	Rufus King	Federalist	14
1808	James Madison	Dem.-Rep.	122	George Clinton	Dem.-Rep.	113
	Charles C. Pinckney	Federalist	47	Rufus King	Federalist	47
	George Clinton	Dem.-Rep.	6	John Langdon	Ind. (no party)	9
	Votes not cast		1	James Madison	Dem.-Rep.	3
				James Monroe	Dem.-Rep.	3
1812				Votes not cast		1
	James Madison	Dem.-Rep.	128	Elbridge Gerry	Dem.-Rep.	131
	De Witt Clinton	Federalist	89	Jared Ingersoll	Federalist	86
	Votes not cast		1	Votes not cast		1
1816	James Monroe	Dem.-Rep.	183	Daniel D. Tompkins	Dem.-Rep.	183
	Rufus King	Federalist	34	John E. Howard	Federalist	22
	Votes not cast		4	James Ross	Ind. (no party)	5
				John Marshall	Federalist	4
				Robert G. Harper	Ind. (no party)	3
1820				Votes not cast		4
	James Monroe	Dem.-Rep.	231	Daniel D. Tompkins	Dem.-Rep.	218
	John Quincy Adams	Ind. (no party)	1	Richard Stockton	Ind. (no party)	8
	Votes not cast		3	Daniel Rodney	Ind. (no party)	4
				Richard Rush	Ind. (no party)	1
				Robert G. Harper	Ind. (no party)	1
				Votes not cast		3
1824 ²	John Quincy Adams	(no party)	84	John C. Calhoun	(no party)	182
	Andrew Jackson	(no party)	99	Nathan Sanford	(no party)	30
	William H. Crawford	(no party)	41	Nathaniel Macon	(no party)	24
	Henry Clay	(no party)	37	Andrew Jackson	(no party)	13
				Martin Van Buren	(no party)	9
				Henry Clay	(no party)	2
				Votes not cast		1
1828	Andrew Jackson	Democratic	178	John C. Calhoun	Democratic	171
	John Quincy Adams	Natl. Rep.	83	Richard Rush	Natl. Rep.	83
				William Smith	Democratic	7
1832	Andrew Jackson	Democratic	219	Martin Van Buren	Democratic	189
	Henry Clay	Natl. Rep.	49	John Sergeant	Natl. Rep.	49
	John Floyd	Ind. (no party)	11	Henry Lee	Ind. (no party)	11
	William Wirt ^a	Antimasonic	7	Amos Ellmaker	Antimasonic	7
	Votes not cast		2	William Wilkins	Ind. (no party)	30
				Votes not cast		2
1836	Martin Van Buren	Democratic	170	Richard M. Johnson ⁴	Democratic	147
	William H. Harrison	Whig	73	Francis Granger	Whig	77
	Hugh L. White	Whig	26	John Tyler	Democratic	47
	Daniel Webster	Whig	14	William Smith	Ind. (no party)	23
	W. P. Mangum	Ind. (no party)	11			
1840	William H. Harrison ⁵	Whig	234	John Tyler	Whig	234
	Martin Van Buren	Democratic	60	Richard M. Johnson	Democratic	48
				L. W. Tazewell ⁶	Ind. (no party)	11
				James K. Polk	Democratic	1

Year	Presidential candidates	Party	Electoral vote	Vice-presidential candidates	Party	Electoral vote
1844	James K. Polk	Democratic	170	George M. Dallas	Democratic	170
	Henry Clay	Whig	105	Theo. Frelinghuysen	Whig	105
1848	Zachary Taylor ⁶	Whig	163	Millard Fillmore	Whig	163
	Lewis Cass	Democratic	127	William O. Butler	Democratic	127
1852	Franklin Pierce	Democratic	254	William R. King	Democratic	254
	Winfield Scott	Whig	42	William A. Graham	Whig	42
1856	James Buchanan	Democratic	174	John C. Breckinridge	Democratic	174
	John C. Frémont	Republican	114	William L. Dayton	Republican	114
	Millard Fillmore	American ⁷	8	A. J. Donelson	American ⁷	8
1860	Abraham Lincoln	Republican	180	Hannibal Hamlin	Republican	180
	John C. Breckinridge	Democratic	72	Joseph Lane	Democratic	72
	John Bell	Const. Union	39	Edward Everett	Const. Union	39
	Stephen A. Douglas	Democratic	12	H. V. Johnson	Democratic	12
1864	Abraham Lincoln ⁸	Union ¹⁰	212	Andrew Johnson	Union ¹⁰	212
	George B. McClellan	Democratic	21	G. H. Pendleton	Democratic	21
1868	Ulysses S. Grant	Republican	214	Schuyler Colfax	Republican	214
	Horatio Seymour	Democratic	80	Francis P. Blair, Jr.	Democratic	80
	Votes not counted ⁹		23	Votes not counted ⁹		23

¹ The first election in which the electors voted for President and Vice President on separate ballots. (See Amendment XII to the Constitution.) ² As no candidate had an electoral-vote majority, the House of Representatives chose the President from the first three. In a vote by states, 13 votes were cast for Adams, 7 for Jackson, and 4 for Crawford. ³ The Antimasonic party. On Sept. 26, 1831, was the first party to hold a nominating convention to choose candidates for President and Vice President. ⁴ As Johnson did not have an electoral-vote majority, the Senate chose him 33-14 over Granger, the others being legally out of the race. ⁵ Harrison died Apr. 4, 1841, and Tyler succeeded him Apr. 6. ⁶ Taylor died July 9, 1850, and Fillmore succeeded him July 10. ⁷ Also known as the Know-Nothing party. ⁸ Lincoln died Apr. 15, 1865, and Johnson succeeded him the same day. ⁹ 23 Southern electoral votes were excluded. ¹⁰ Name adopted by the Republican National Convention of 1864. Johnson was a War Democrat.

Year	Presidential candidates	Party	Electoral vote	Popular vote ¹	Vice-presidential candidates and party
1872	Ulysses S. Grant	Republican	286	3,597,132	Henry Wilson—R
	Horace Greeley	Dem., Liberal Rep.	(*)	2,834,125	B. Gratz Brown—D, LR—(47)
	Thomas A. Hendricks	Democratic	42		Scattering—(19)
	B. Gratz Brown	Dem., Liberal Rep.	18		Votes not counted—(14)
	Charles J. Jenkins	Democratic	2		
	David Davis	Democratic	1		
	Votes not counted		17		
1876 ³	Rutherford B. Hayes	Republican	185	4,033,768	William A. Wheeler—R
	Samuel J. Tilden	Democratic	184	4,285,992	Thomas A. Hendricks—D
	Peter Cooper	Greenback	0	81,737	Samuel F. Cary—G
1880	James A. Garfield ⁴	Republican	214	4,449,053	Chester A. Arthur—R
	Winfield S. Hancock	Democratic	155	4,442,035	William H. English—D
	James B. Weaver	Greenback	0	308,578	B. J. Chambers—G
1884	Grover Cleveland	Democratic	219	4,911,017	Thomas A. Hendricks—D
	James G. Blaine	Republican	182	4,848,334	John A. Logan—R
	Benjamin F. Butler	Greenback	0	175,370	A. M. West—G
	John P. St. John	Prohibition	0	150,369	William Daniel—P
1888	Benjamin Harrison	Republican	233	5,440,216	Levi P. Morton—R
	Grover Cleveland	Democratic	168	5,538,233	A. G. Thurman—D
	Clinton B. Fisk	Prohibition	0	249,506	John A. Brooks—P
	Alson J. Streeter	Union Labor	0	146,935	Charles E. Cunningham—UL
1892	Grover Cleveland	Democratic	277	5,556,918	Adlai E. Stevenson—D
	Benjamin Harrison	Republican	145	5,176,108	Whitelaw Reid—R
	James B. Weaver	People's ⁵	22	1,041,028	James G. Field—Peo
	John Bidwell	Prohibition	0	264,133	James B. Cranfill—P
1896	William McKinley	Republican	271	7,035,638	Garret A. Hobart—R
	William J. Bryan	Dem., People's ⁵	176	6,467,946	Arthur Sewall—D—(149)
	John M. Palmer	Natl. Dem.	0	133,148	Thomas E. Watson—Peo—(27)
	Joshua Levering	Prohibition	0	132,007	Simon B. Buckner—ND
1900	William McKinley ⁶	Republican	292	7,219,530	Theodore Roosevelt—R
	William J. Bryan	Dem., People's ⁵	155	6,358,071	Adlai E. Stevenson—D, Peo
	John G. Woolley	Prohibition	0	208,914	Henry B. Metcalf—P
	Eugene V. Debs	Social Democratic	0	94,768	Job Harriman—SD

Year	Presidential candidates	Party	Electoral vote	Popular vote ¹	Vice-presidential candidates and party
1904	Theodore Roosevelt	Republican	336	7,628,834	Charles W. Fairbanks—R
	Alton B. Parker	Democratic	140	5,084,491	Henry G. Davis—D
	Eugene V. Debs	Socialist	0	402,400	Benjamin Hanford—S
	Silas C. Swallow	Prohibition	0	258,536	George W. Carroll—P
	Thomas E. Watson	People's	0	117,183	Thomas H. Tibbles—Peo
1908	William H. Taft	Republican	321	7,679,006	James S. Sherman—R
	William J. Bryan	Democratic	162	6,409,106	John W. Kern—D
	Eugene V. Debs	Socialist	0	420,820	Benjamin Hanford—S
	Eugene W. Chafin	Prohibition	0	253,840	Aaron S. Watkins—P
	Thomas L. Hisgen	Independence	0	82,872	John T. Graves—I
1912	Woodrow Wilson	Democratic	435	6,286,214	Thomas R. Marshall—D
	Theodore Roosevelt	Progressive	83	4,126,022	Hiram Johnson—Prog
	William H. Taft	Republican	8	3,483,922	Nicholas M. Butler—R ⁷
	Eugene V. Debs	Socialist	0	897,011	Emil Seidel—S
	Eugene W. Chafin	Prohibition	0	206,275	Aaron S. Watkins—P
1916	Woodrow Wilson	Democratic	277	9,129,606	Thomas R. Marshall—D
	Charles E. Hughes	Republican	254	8,538,221	Charles W. Fairbanks—R
	A. L. Benson	Socialist	0	585,113	G. R. Kirkpatrick—S
	J. Frank Hanly	Prohibition	0	220,506	Ira Landrith—P
1920	Warren G. Harding ⁸	Republican	404	16,152,200	Calvin Coolidge—R
	James M. Cox	Democratic	127	9,147,353	Franklin D. Roosevelt—D
	Eugene V. Debs	Socialist	0	917,799	Seymour Stedman—S
	P. P. Christensen	Farmer-Labor	0	265,411	Max S. Hayes—FL
	Aaron S. Watkins	Prohibition	0	189,408	D. Leigh Colvin—P
1924	Calvin Coolidge	Republican	382	15,725,016	Charles G. Dawes—R
	John W. Davis	Democratic	136	8,385,586	Charles W. Bryan—D
	Robert M. LaFollette	Progressive, Socialist	13	4,822,856	Burton K. Wheeler—Prog S
1928	Herbert Hoover	Republican	444	21,392,190	Charles Curtis—R
	Alfred E. Smith	Democratic	87	15,016,443	Joseph T. Robinson—D
1932	Franklin D. Roosevelt	Democratic	472	22,821,857	John N. Garner—D
	Herbert Hoover	Republican	59	15,761,841	Charles Curtis—R
1936	Franklin D. Roosevelt	Democratic	523	27,751,597	John N. Garner—D
	Alfred M. Landon	Republican	8	16,679,583	Frank Knox—R
1940	Franklin D. Roosevelt	Democratic	449	27,244,160	Henry A. Wallace—D
	Wendell L. Willkie	Republican	82	22,305,198	Charles L. McNary—R
1944	Franklin D. Roosevelt ⁹	Democratic	432	25,602,504	Harry S. Truman—D
	Thomas E. Dewey	Republican	99	22,006,285	John W. Bricker—R
1948	Harry S. Truman	Democratic	303	24,105,695	Alben W. Barkley—D
	Thomas E. Dewey	Republican	189	21,969,170	Earl Warren—R
	J. Strom Thurmond	States' Rights Dem.	39	1,169,021	Fielding L. Wright—SR
	Henry A. Wallace	Progressive	0	1,156,103	Glen Taylor—Prog
1952	Dwight D. Eisenhower	Republican	442	33,824,351	Richard M. Nixon—R
	Adlai E. Stevenson	Democratic	89	27,314,987	John J. Sparkman—D
1956 ¹⁰	Dwight D. Eisenhower	Republican	457	35,581,003	Richard M. Nixon—R
	Adlai E. Stevenson	Democratic	73	25,738,765	Estes Kefauver—D

NOTE: For minor party vote and candidates, see tables on following pages for 1948-1956.

¹ For those candidates receiving over 75,000 votes. ² Greeley died Nov. 29, 1872, before his 66 electors voted. In the electoral balloting for President, 63 of Greeley's votes were scattered among Hendricks, Brown, Jenkins and Davis; the other 3, included in "Votes not counted," were cast for Greeley by electors from Georgia. This was the first election in which every state chose its electors by popular vote. ³ After the voting of the electoral college, Tilden had 184 undisputed votes, and Hayes 163. However, 22 other votes were in doubt, because two sets of electoral ballots were received from South Carolina, Louisiana, Florida and Oregon. For each of the three Southern states, one set was completely Democratic, the other completely Republican. For Oregon, one set gave all 3 of the state's votes to Hayes, the other gave one of the votes to Tilden. To settle the dispute, Congress created an Electoral Commission on Jan. 29, 1877. This Commission, consisting of 5 Supreme Court justices, 5 senators and 5 representatives (8 Republicans and 7 Democrats), gave the 22 votes in question to Hayes. ⁴ Garfield died Sept. 19, 1881, and Arthur succeeded him Sept. 20. ⁵ The members of the People's party were known as Populists. ⁶ McKinley died Sept. 14, 1901, and Roosevelt succeeded him the same day. ⁷ James S. Sherman, Republican candidate for Vice President, died Oct. 30, 1917, and the Republican electoral votes were cast for Butler. ⁸ Harding died Aug. 2, 1923, and Coolidge succeeded him Aug. 3. ⁹ Roosevelt died Apr. 12, 1945, and Truman succeeded him the same day. ¹⁰ One electoral vote from Alabama was cast for Walter B. Jones.

Presidential Election of 1948

CANDIDATES FOR PRESIDENT AND VICE PRESIDENT

Democratic—Harry S. Truman, Missouri; Alben Barkley, Kentucky.

Republican—Thomas E. Dewey, New York; Earl Warren, California.

States' Rights Democratic—J. Strom Thurmond, South Carolina; Fielding L. Wright, Mississippi.

Progressive—Henry A. Wallace, Iowa; Glen H. Taylor, Idaho.

Socialist—Norman Thomas, New York; Tucker P. Smith, Michigan.

Prohibition—Claude A. Watson, California; Dale Learn, Pennsylvania.

Socialist Labor—Edward A. Teichert, Pennsylvania; Stephen Emery, New York.

State	Total	Dem.	Rep.	SR Dem.	Plur.	Electoral			Prog. ¹	Others ²
						D	R	S		
Alabama.....	214,980	(4)	40,930	171,443	130,513 S	..	..	11	1,522	1,085
Arizona.....	177,065	95,251	77,597	..	17,654 D	4	..	..	3,310	907
Arkansas.....	242,475	149,659	50,959	40,068	98,700 D	9	..	..	751	1,038
California.....	4,021,538	1,913,134	1,895,269	1,228 ⁵	17,865 D	25	..	..	190,381	21,526
Colorado.....	515,237	267,288	239,714	..	27,574 D	6	..	..	6,115	2,120
Connecticut.....	883,518	423,297	437,754	..	14,457 R	..	8	..	13,713	8,754
Delaware.....	139,073	67,813	69,588	..	1,775 R	..	3	..	1,050	622
Florida.....	577,643	281,988	194,280	89,755	87,708 D	8	..	..	11,620	..
Georgia.....	418,760	254,646	76,691	85,055	169,591 D	12	..	..	1,636	732
Idaho.....	214,816	107,370	101,514	..	5,856 D	4	..	..	4,972	960
Illinois.....	3,984,046	1,994,715	1,961,103	..	33,612 D	28	..	..	..	28,228
Indiana.....	1,656,214	807,833	821,079	..	13,246 R	..	13	..	9,649	17,653
Iowa.....	1,038,264	522,380	494,018	..	28,362 D	10	..	..	12,125	9,741
Kansas.....	788,819	351,902	423,039	..	71,137 R	..	8	..	4,603	9,275
Kentucky.....	822,658	466,756	341,210	10,411	125,546 D	11	..	..	1,567	2,714
Louisiana.....	416,326	136,344	72,657	204,290	67,946 S	..	..	10	3,035	..
Maine.....	264,787	111,916	150,234	..	38,318 W	..	5	..	1,884	753
Maryland.....	596,735	286,521	294,814	2,476 ⁶	8,293 R	..	8	..	9,983	2,941
Massachusetts.....	2,155,347	1,151,788	909,370	..	242,418 D	16	..	..	38,157	56,032
Michigan.....	2,109,609	1,003,448	1,038,595	..	35,147 R	..	19	..	46,515	21,051
Minnesota.....	1,212,226	692,966 ⁷	483,617	..	209,349 D	11	..	..	27,866	7,777
Mississippi.....	192,190	19,384 ⁷	5,043 ⁸	167,538 ⁹	148,154 S	..	..	9	225	..
Missouri.....	1,578,628	917,315	655,039	..	262,276 D	15	..	..	3,998	2,276
Montana.....	224,278	119,071	96,770	..	22,301 D	4	..	..	7,313	1,124
Nebraska.....	488,939	224,165	264,774	..	40,609 R	..	6	..	..	..
Nevada.....	62,117	31,291	29,357	..	1,934 D	3	..	..	1,469	..
New Hampshire.....	231,440	107,995	121,299	7	13,304 R	..	4	..	1,970	169
New Jersey.....	1,949,555	895,455	981,124	..	85,669 R	..	16	..	42,683	30,293
New Mexico.....	185,767	105,464	80,303	..	25,161 D	4	..	..	..	..
New York.....	6,274,527	2,780,204 ¹⁰	2,841,163	..	60,959 R	..	47	..	509,559	143,601
North Carolina.....	791,209	459,070	258,572	69,652	200,498 D	14	..	..	3,915	..
North Dakota.....	220,716	95,812	115,139	374	19,327 R	..	4	..	8,391	1,000
Ohio.....	2,936,071	1,452,791	1,445,684	..	7,107 D	25	..	..	37,596	..
Oklahoma.....	721,599	452,782	268,817	..	183,965 D	10	..	..	..	..
Oregon.....	524,080	243,147	260,904	..	17,757 R	..	6	..	14,978	5,051
Pennsylvania.....	3,735,149	1,752,426	1,902,197	..	149,771 R	..	35	..	55,161	25,365
Rhode Island.....	326,098	188,619	134,892	..	53,727 D	4	..	..	2,587	..
South Carolina.....	142,571	34,423	5,386	102,607	68,184 S	..	8	..	154	1
South Dakota.....	250,105	117,653	129,651	..	11,998 R	..	4	..	2,801	..
Tennessee.....	550,283	270,402	202,914	73,815	67,488 D	11	..	1	1,864	1,288
Texas.....	1,147,245	750,700	282,240	106,909	468,460 D	23	..	..	3,764	3,632
Utah.....	276,305	149,151	124,402	..	24,749 D	4	..	..	2,679	73
Vermont.....	123,382	45,557	75,926	..	30,369 R	..	3	..	1,279	620
Virginia.....	419,256	200,786	172,070	43,393	28,716 D	11	..	..	2,047	960
Washington.....	905,059	476,165	386,315	..	89,850 D	8	..	..	31,692	10,887
West Virginia.....	748,750	429,188	316,251	..	112,937 D	8	..	..	3,311	..
Wisconsin.....	1,276,800	647,310	590,959	..	56,351 D	12	..	..	25,282	13,249
Wyoming.....	101,425	52,354	47,947	..	4,407 D	3	..	..	931	193
Total.....	48,833,680	24,105,695	21,969,170	1,169,021	2,136,525 D	303	189	39	1,156,103	433,691

¹ Independent Progressive in California; Peoples in Connecticut; Independent in Kansas, Mississippi, Ohio, South Dakota; American Labor in New York; People's Progressive in Wisconsin. ² Industrial Government in Minnesota, New York, Pennsylvania; Independent Socialist Labor in Wisconsin. ³ Breakdown of other votes: Socialist 139,009; Prohibition 103,216; Socialist Labor 29,061; Socialist Workers 13,613; Christian Nationalist 42; Greenback 6; Vegetarian 4; blank 145,320; write-in 1,683; scattering 1,666; void 71. ⁴ Not on ballot. ⁵ Write-in votes. ⁶ Including Farmer-Labor votes. ⁷ National Democratic. ⁸ Contains 2,595 Republican and 2,448 Independent Republican votes. ⁹ Mississippi Democratic. ¹⁰ Includes 222,562 Liberal votes.

Presidential Election of 1952

CANDIDATES FOR PRESIDENT AND VICE PRESIDENT

Republican—Dwight D. Eisenhower, New York; Richard M. Nixon, California.

Democratic—Adlai E. Stevenson, Illinois; John J. Sparkman, Alabama.

Progressive¹—Vincent Hallinan, California; Mrs. Charlotta A. Bass, New York.

Prohibition—Stuart Hamblen, California; Enoch A. Holtwick, Illinois.

Socialist Labor²—Eric Hass, New York; Stephen Emery, New York.

Socialist—Darlington Hoopes, Pennsylvania; Samuel H. Friedman, New York.

State	Total	Rep.	Dem.	Plur.	Electoral R D	Prog. ¹	Prohib.	Soc. Lab. ²	Others ³
Alabama.....	426,120	149,231	275,075	125,844 D	11	....	1,814	....	....
Arizona.....	260,570	152,042	108,528	43,514 R	4	....	....	....	....
Arkansas.....	404,800	177,155	226,300	49,145 D	8	....	886	1	458
California.....	5,141,849	2,897,310	2,197,548	699,762 R	32	24,106	15,653	....	7,232
Colorado.....	630,103	379,782	245,504	134,278 R	6	1,919	....	352	2,546
Connecticut.....	1,096,911	611,012	481,649	129,363 R	8	....	....	535	3,715
Delaware.....	174,025	90,059	83,315	6,744 R	3	155	234	242	20
Florida.....	989,337	544,036	444,950	99,086 R	10	....	....	....	351
Georgia.....	655,803	198,979	456,823	257,844 D	12	....	....	....	1
Idaho.....	276,231	180,707	95,081	85,626 R	4	443	....	....	....
Illinois.....	4,481,058	2,457,327	2,013,920	443,407 R	27	....	....	9,363	448
Indiana.....	1,955,325	1,136,259	801,530	334,729 R	13	1,222	15,335	979	....
Iowa.....	1,268,773	808,906	451,513	357,393 R	10	5,085	2,882	139	248
Kansas.....	896,166	616,302	273,296	343,006 R	8	....	6,038	....	530
Kentucky.....	993,148	495,029	495,729	700 D	10	336	1,161	893	....
Louisiana.....	651,952	306,925	345,027	38,102 D	10	....	....	....	....
Maine.....	351,786	232,353	118,806	113,547 R	5	332	....	156	139
Maryland.....	902,074	499,424	395,337	104,087 R	9	7,313	....	....	....
Massachusetts.....	2,383,398	1,292,325	1,083,525	208,800 R	16	4,636	886	1,957	69
Michigan.....	2,798,592	1,551,529	1,230,657	320,872 R	20	3,922	10,331	1,495	658
Minnesota.....	1,379,483	763,211	608,458 ⁴	154,753 R	11	2,666	2,147	2,383	618
Mississippi.....	285,532	(⁵)	172,566	59,600 D	8	....	....	....	112,966
Missouri.....	1,892,062	959,429	929,830	29,599 R	13	987	885	169	762
Montana.....	265,037	157,394	106,213	51,181 R	4	723	548	....	159
Nebraska.....	609,660	421,603	188,057	233,546 R	6	....	....	....	....
Nevada.....	82,190	50,502	31,688	18,814 R	3	....	....	....	....
New Hampshire.....	272,950	166,287	106,663	59,624 R	4	....	....	....	....
New Jersey.....	2,419,554	1,374,613	1,015,902	358,711 R	16	5,589	989	5,815	16,646
New Mexico.....	238,608	132,170	105,661	26,509 R	4	....	297	35	445
New York.....	7,128,241	3,952,815	3,104,601 ⁴	848,214 R	45	64,211	....	1,560	5,054
North Carolina.....	1,210,910	558,107	652,803	94,696 D	14	....	....	....	....
North Dakota.....	270,127	191,712	76,694	115,018 R	4	344	302	....	1,075
Ohio.....	3,700,758	2,100,456	1,600,302	500,154 R	25	....	....	....	....
Oklahoma.....	948,984	518,045	430,939	87,106 R	8	....	....	....	....
Oregon.....	695,059	420,815	270,579	150,236 R	6	....	....	....	3,665
Pennsylvania.....	4,580,717	2,415,789	2,146,269	269,520 R	32	4,200	8,771	1,347	4,341
Rhode Island.....	414,498	210,935	203,293	7,642 R	4	187	....	83	....
South Carolina.....	341,086	168,082 ⁷	173,004	4,922 D	8	....	....	....	....
South Dakota.....	294,283	203,857	90,426	113,431 R	4	....	....	....	....
Tennessee.....	892,553	446,147	443,710	2,437 R	11	885	1,432	....	379
Texas.....	2,076,006	1,102,878	969,288	133,590 R	24	294	1,983	....	1,563
Utah.....	329,554	194,190	135,364	58,826 R	4	....	....	....	....
Vermont.....	153,539	109,717	43,355	66,362 R	3	282	....	....	185
Virginia.....	619,689	349,037	268,677	80,360 R	12	311	....	1,160	504
Washington.....	1,102,708	599,107	492,845	106,262 R	9	2,460	....	633	7,663
West Virginia.....	873,548	419,970	453,578	33,608 D	8	....	....	....	....
Wisconsin.....	1,607,370	979,744	622,175	357,569 R	12	....	....	....	5,451
Wyoming.....	129,251	81,047	47,934	33,113 R	3	....	194	36	40
Total.....	61,551,978	33,824,351	27,314,987 ⁶	6,509,364 R	442	132,608	72,768	29,333	177,931

¹ Independent Progressive in California; Peace Progressive in Massachusetts; American Labor in New York. ² Industrial Government in Minnesota, New York and Pennsylvania. ³ Breakdown of Other votes: Independent (pledged to Republican candidate in Miss.), 112,966; Socialist, 18,322; Christian Nationalist, 10,557; Socialist Workers, 8,956; write-in, 4,431; Poor Man's, 4,203; scattering, 4,040; Independent, 3,665; Constitution, 2,911; Vincent Hallinan (Independent in Wis.), 2,174; People's party of Connecticut, 1,466; Farrell Dobbs (Independent in Wis.), 1,350; Darlington Hoopes (Independent in Wis.), 1,157; Eric Hass (Independent in Wis.), 770; Social Democrat, 604; America First, 233; Independent Progressive, 225; Liberty, 1. ⁴ Democratic-Farmer Labor votes. ⁵ 112,966 Independent votes were pledged to the Republican candidate; these are shown as Other votes. ⁶ Includes 416,711 Liberal votes. ⁷ Includes 158,289 votes for separate set of electors for Republican candidates by petition.

Presidential Election of 1956

(Compiled from official sources)

CANDIDATES FOR PRESIDENT AND VICE PRESIDENT

Republican—Dwight D. Eisenhower, New York; Richard M. Nixon, California.

Democratic—Adlai E. Stevenson, Illinois; Estes Kefauver, Tennessee.

Prohibition—Enoch A. Holtwick, Illinois; Edward M. Cooper, California.

Socialist—Darlington Hoopes, Pennsylvania; Samuel H. Friedman, New York.

Socialist Labor—Eric Hass, New York; Georgia Cozzini, Wisconsin.

Socialist Workers—Farrell Dobbs, New York; Myra Tanner Weiff, New York.

State	Total	Rep.	Dem.	Plur.	Electoral vote		Other Votes
					R	D	
Alabama.....	496,861	195,694	280,844	85,150 D	10 ¹	..	American party..... 483
Arizona.....	290,173	176,990	112,880	64,110 R	4	..	American Third party..... 1,829
Arkansas.....	406,572	186,287	213,277	26,990 D	8	..	Andrews, T. Coleman..... 1,140
California.....	5,466,355	3,027,668	2,420,135	607,533 R	32	..	(write-in)
Colorado.....	663,074	394,479	263,997	130,482 R	6	..	Conservative party..... 5,317
Connecticut.....	1,117,121	711,837	405,079	306,758 R	8	..	Constitution party..... 31,950
Delaware.....	177,988	98,057	79,421	18,636 R	3	..	(Includes 3,202 A. C. party
Florida.....	1,124,220	643,849	480,371	163,478 R	10	..	of Iowa votes)
Georgia.....	668,920	222,778	444,388	221,610 D	12	..	Hass, Eric (write-in)..... 150
Idaho.....	272,989	166,979	105,868	61,111 R	4	..	Hoopes, Darlington..... 82
Illinois.....	4,407,407	2,623,327	1,775,682	847,645 R	27	..	(write-in)
Indiana.....	1,974,607	1,182,811	783,908	398,903 R	13	..	Independent..... 72,235
Iowa.....	1,234,564	729,187	501,858	227,329 R	10	..	Industrial Government..... 2,080
Kansas.....	866,243	566,878	296,317	270,561 R	8	..	Militant Workers..... 2,035
Kentucky.....	1,053,805	572,192	476,453	95,739 R	10	..	Mississippi Black & Tan
Louisiana.....	617,544	329,047	243,977	85,070 R	10	..	Grand Old party..... 4,313
Maine.....	351,706	249,238	102,468	146,770 R	5	..	New party..... 364
Maryland.....	932,351	559,738	372,613	187,125 R	9	..	Prohibition party..... 41,937
Massachusetts.....	2,348,506	1,393,197	948,190	445,007 R	16	..	Socialist party..... 846
Michigan.....	3,080,468	1,713,647	1,359,898	353,749 R	20	..	Socialist Labor party..... 41,510
Minnesota.....	1,340,005	719,302	617,525	101,777 R	11	..	Socialist Workers..... 5,198
Mississippi.....	248,149	56,372	144,498	88,126 D	8	..	States' Rights party..... 109,961
Missouri.....	1,832,572	914,299	918,273	3,974 D	13	..	Virginia Social Democratic
Montana.....	271,171	154,933	116,238	38,695 R	4	..	party..... 444
Nebraska.....	577,137	378,108	199,029	179,079 R	6	..	Werdel, Thomas (write-in)..... 492
Nevada.....	96,689	56,049	40,640	15,409 R	3	..	Write-in..... 1,896
New Hampshire.....	266,994	176,519	90,364	86,155 R	4	..	Scattering (incl. 8 Christian
New Jersey.....	2,484,312	1,606,942	850,337	756,605 R	16	..	Nationalist votes)..... 1,127
New Mexico.....	253,926	146,788	106,098	40,690 R	4	..	Other (not specified)..... 817
New York.....	7,093,336	4,340,340	2,750,769 ²	1,589,571 R	45	..	
North Carolina.....	1,165,592	575,062	590,530	15,468 D	14	..	
North Dakota.....	253,991	156,766	96,742	60,024 R	4	..	
Ohio.....	3,702,265	2,262,610	1,439,655	822,955 R	25	..	
Oklahoma.....	859,350	473,769	385,581	88,188 R	8	..	
Oregon.....	735,597	406,393	329,204	77,189 R	6	..	
Pennsylvania.....	4,576,503	2,585,252	1,981,769	603,483 R	32	..	
Rhode Island.....	387,609	225,819	161,790	64,029 R	4	..	
South Carolina.....	300,583 ³	75,700	136,372	60,672 D	8	..	
South Dakota.....	293,857	171,569	122,288	49,281 R	4	..	
Tennessee.....	939,404	422,288	456,507	5,781 R	11	..	
Texas.....	1,955,168	1,080,619	859,958	220,661 R	24	..	
Utah.....	333,995	215,631	118,364	97,267 R	4	..	
Vermont.....	152,978	110,390	42,549	67,841 R	3	..	
Virginia.....	697,978	386,459	267,760	118,699 R	12	..	
Washington.....	1,150,889	620,430	523,002	97,428 R	9	..	
West Virginia.....	830,831	449,297	381,534	67,763 R	8	..	
Wisconsin.....	1,550,558	954,844	586,768	368,076 R	12	..	
Wyoming.....	124,127	74,573	49,554	25,019 R	3	..	
Total.....	62,027,040	35,581,003	26,031,322	9,549,681 R	457	73	
							TOTAL..... 326,206
							OTHER FACTS ABOUT ELECTIONS
							Candidate with highest popular vote:
							Eisenhower (1956), 35,581,003.
							Candidate with highest electoral vote:
							F. Roosevelt (1936), 523.
							Candidate carrying most states: F.
							Roosevelt (1936), 46.
							Candidate running most times: Nor-
							man Thomas, 6 (1928, 1932, 1936,
							1940, 1944, 1948).
							Candidate elected, defeated, then re-
							elected: Cleveland (1884, 1888,
							1892).

¹ Alabama's 11th electoral vote was cast for Walter B. Jones of Alabama.

² Includes 88,509 votes for electors nominated by petition.

³ Includes 292,557 Liberal Party votes.

Electoral Vote for President, 1888-1924

States	1888	1892	1896	1900	1904	1908	1912	1916	1920	1924
	Harrison, Rep. Cleveland, Dem.	Cleveland, Dem. Harrison, Rep. Weaver, Peo.	McKinley, Rep. Bryan, Dem.	McKinley, Rep. Bryan, Dem.	Roosevelt, Rep. Parkes, Dem.	Taft, Rep. Bryan, Dem.	Wilson, Dem. Taft, Rep. Roosevelt, Prog.	Wilson, Dem. Hughes, Rep.	Hoyding, Rep. Cox, Dem.	Coolidge, Rep. Davis, Dem. LaFollette, Prog.
Alabama	10	11	11	11	11	11	12	12	12	12
Arizona							3	3		
Arkansas	7	8	8	8	9	9	9	9	9	9
California	8	8 1	8 1	9	10	10	2 11	13	13	13
Colorado	3		4	4	5	5	6	6	6	6
Connecticut	6	6	6	6	7	7	7	7	7	7
Delaware	3	3	3	3	3	3	3	3	3	3
Florida	4	4	4	4	5	5	6	6	6	6
Georgia	12	13	13	13	13	13	14	14	14	14
Idaho		3	3	3	3	3	4	4	4	4
Illinois	22	24	24	24	27	27	29	29	29	29
Indiana	15	15	15	15	15	15	15	15	15	15
Iowa	13	13	13	13	13	13	13	13	13	13
Kansas	9	10	10	10	10	10	10	10	10	10
Kentucky	13	13	12 1	13	13	13	13	13	13	13
Louisiana	8	8	8	8	9	9	10	10	10	10
Maine	6	6	6	6	6	6	6	6	6	6
Maryland	8	8	8	8	1 7	2 6	8	8	8	8
Massachusetts	14	15	15	15	16	16	18	18	18	18
Michigan	13	5 9	14	14	14	14	15	15	15	15
Minnesota	7	9	9	9	11	11	12	12	12	12
Mississippi	9	9	9	9	10	10	10	10	10	10
Missouri	16	17	17	17	18	18	18	18	18	18
Montana		3	3	3	3	3	4	4	4	4
Nebraska	5	8	8	8	8	8	8	8	8	8
Nevada	3	3	3	3	3	3	3	3	3	3
New Hampshire	4	4	4	4	4	4	4	4	4	4
New Jersey	9	10	10	10	12	12	14	14	14	14
New Mexico							3	3	3	3
New York	36	36	36	36	39	39	45	45	45	45
North Carolina	11	11	11	11	12	12	12	12	12	12
North Dakota		1 1 1	3	3	4	4	5	5	5	5
Ohio	23	1 22	23	23	23	23	24	24	24	24
Oklahoma						7	10	10	10	10
Oregon	3	3 1	4	4	4	4	5	5	5	5
Pennsylvania	30	32	32	32	34	34	38	38	38	38
Rhode Island	4	4	4	4	4	4	5	5	5	5
South Carolina	9	9	9	9	9	9	9	9	9	9
South Dakota		4	4	4	4	4	5	5	5	5
Tennessee	12	12	12	12	12	12	12	12	12	12
Texas	13	15	15	15	18	18	20	20	20	20
Utah			3	3	3	3	4	4	4	4
Vermont	4	4	4	4	4	4	4	4	4	4
Virginia	12	12	12	12	12	12	12	12	12	12
Washington		4	4	4	5	5	7	7	7	7
West Virginia	6	6	6	6	7	7	8	1 7	8	8
Wisconsin	11	12	12	12	12	13	13	13	13	13
Wyoming		3	3	3	3	3	3	3	3	3
Total	233 168	277 145 22	271 176	292 155	336 140	321 162	435 8 88	277 254	404 127	382 136 13

NOTE: For electoral votes by state in elections later than 1924, see preceding pages.

Qualifications for Voting in the 48 States

Source: Questionnaires to the states.

State	Minimum length of U. S. citizenship	Residence ¹			Literacy test	Poll tax ²
		State	County	District		
Alabama.....	.....	1 yr.	6 mo.	3 mo. ³	Yes	\$1.50 ¹⁴
Arizona.....	1 yr.	1 yr.	30 da.	30 da.	Yes	.....
Arkansas.....	.....	1 yr.	6 mo.	30 da. ⁴	.....	1.00
California.....	3 mo.	1 yr.	3 mo.	54 da. ⁴	Yes	.....
Colorado.....	.....	1 yr.	3 mo.	30 da. ⁵	.....	.....
Connecticut.....	.....	1 yr.	.....	6 mo. ⁶	Yes	.....
Delaware.....	.....	1 yr.	3 mo.	30 da.	Yes	.....
Florida.....	.....	1 yr.	6 mo.	.....	.....	.....
Georgia ⁷.....	.....	1 yr.	6 mo.	6 mo.	Yes	.....
Idaho.....	(⁹)	6 mo.	30 da.	.....	.....	.....
Illinois.....	.....	1 yr.	3 mo.	30 da.	.....	.....
Indiana.....	.....	6 mo.	2 mo. ⁸	30 da. ⁴	.....	.....
Iowa.....	.....	6 mo.	60 da.	10 da. ⁴	.....	.....
Kansas.....	.....	6 mo.	.....	30 da. ¹⁰	.....	.....
Kentucky.....	.....	1 yr.	6 mo.	60 da. ⁴	.....	.....
Louisiana.....	.....	1 yr.	1 yr. ¹¹	3 mo. ¹²	Yes	.....
Maine.....	.....	6 mo.	.....	3 mo. ⁶	Yes	.....
Maryland.....	.....	1 yr.	6 mo.	6 mo.	.....	.....
Massachusetts.....	.....	1 yr.	.....	6 mo. ⁶	Yes	.....
Michigan.....	.....	6 mo.	.....	30 da. ⁶	.....	.....
Minnesota.....	3 mo.	6 mo.	.....	30 da.	.....	.....
Mississippi.....	.....	2 yr.	1 yr.	1 yr.	(¹³)	2.00
Missouri.....	.....	1 yr.	2 mo.	2 mo. ⁶	.....	.....
Montana.....	.....	1 yr.	30 da.	30 da. ⁴	.....	.....
Nebraska.....	.....	6 mo.	40 da.	10 da.	.....	.....
Nevada.....	.....	6 mo.	30 da.	10 da. ⁴	.....	.....
New Hampshire.....	.....	6 mo.	.....	6 mo. ⁶	Yes	.....
New Jersey.....	.....	1 yr.	5 mo.	.....	.....	.....
New Mexico.....	.....	1 yr.	3 mo.	30 da. ⁴	.....	.....
New York.....	90 da.	1 yr.	4 mo.	30 da.	Yes	.....
North Carolina.....	.....	1 yr.	4 mo.	4 mo.	Yes	.....
North Dakota.....	.....	1 yr.	3 mo.	30 da. ⁴	.....	.....
Ohio.....	.....	1 yr.	40 da.	40 da. ⁴	.....	.....
Oklahoma.....	.....	1 yr.	6 mo.	30 da. ⁴	.....	.....
Oregon.....	.....	6 mo.	30 da. ²²	30 da. ^{4, 22}	Yes	.....
Pennsylvania.....	1 mo.	1 yr. ¹³	.....	2 mo.	.....	.....
Rhode Island.....	1 yr.	1 yr.	.....	6 mo. ⁶	.....	.....
South Carolina.....	2 yr.	2 yr.	1 yr.	4 mo.	.....	(¹⁵)
South Dakota.....	5 yr.	1 yr.	3 mo.	30 da. ⁴	.....	.....
Tennessee.....	.....	1 yr.	6 mo.	.....	.....	.....
Texas.....	.....	1 yr.	6 mo.	.....	.....	1.75 ²¹
Utah.....	90 da.	1 yr.	4 mo.	60 da. ⁴	.....	.....
Vermont ²⁰.....	.....	1 yr.	.....	3 mo. ^{4, 15}	.....	.....
Virginia.....	.....	1 yr.	6 mo. ¹⁶	30 da. ⁴	Yes	1.50
Washington.....	.....	1 yr.	3 mo.	30 da. ¹⁷	Yes	.....
West Virginia.....	.....	1 yr.	2 mo.	.....	.....	.....
Wisconsin.....	.....	1 yr. ²³	.....	10 da.	.....	.....
Wyoming.....	.....	1 yr.	60 da.	10 da.	(¹²)	.....

¹ Registration of all or part of the voters is required in most states. ² Annual levy. Although poll (or head) taxes are levied in several other states, those listed make payment of the tax a condition for voting. ³ Precinct or ward. ⁴ Precinct. ⁵ City or town, and 15 days in precinct. ⁶ City or town. ⁷ Minimum voting age is 18; in all other states it is 21. ⁸ First paper must have been taken out. ⁹ Township. ¹⁰ Township or ward. ¹¹ Parish. ¹² Must be able to read any section of state constitution. ¹³ 6 months if previously qualified elector or natural-born citizen of state. ¹⁴ 1953 act makes poll tax noncumulative except for 2 years preceding election in which elector offers to vote. ¹⁵ To qualify to vote for representatives to general assembly or justices. ¹⁶ County, city, or town. ¹⁷ City, town, ward, or precinct. ¹⁸ Repealed in 1945. ¹⁹ Precinct; municipality 4 mo. ²⁰ A person must take freeman's oath as qualification for voting. ²¹ \$1.50 levied by state; 25 cents levied by most counties, but not all. ²² To vote for county officials requires 30 days residence in the county; for municipal officials, 30 days in the municipality. State residents may vote in national and state-wide elections without 30 days local residence. ²³ Residents of less than one year may vote in presidential elections if eligible to vote elsewhere prior to moving.

Plurality and Majority

In order to win a plurality, a candidate must receive a greater number of votes than anyone running against him. If he receives 50 votes, for example, and two other candidates receive 49 and 2, he will have a plurality of one vote over his closest opponent.

However, a candidate does not have a majority unless he receives more than 50% of the total votes cast. In the example above, the candidate does not have a majority, because his 50 votes are less than 50% of the 101 votes cast.

If only two candidates receive votes, a plurality is necessarily a majority; but if more than two candidates receive votes, it is possible for one to have a plurality without a majority.

BIOGRAPHIES OF THE PRESIDENTS

GEORGE WASHINGTON

was born February 22, 1732 (February 11, 1731/2, old style) in Westmoreland County, Virginia. He early trained as a surveyor; but in 1752 he was appointed adjutant in the Virginia militia, and for the next three years he took an active part in the wars against the French and Indians, serving as General Braddock's aide in the disastrous campaign against Fort Duquesne. In 1759 he resigned from the militia, married Martha Dandridge Custis, a widow, and settled down as a gentleman farmer at Mount Vernon.

As a militiaman, he had been exposed to the arrogance of the British officers, and his experience as a planter with British commercial restrictions increased his anti-British sentiment. He opposed the Stamp Act of 1765 and after 1770 became increasingly prominent in organizing resistance. A delegate to the Continental Congress, Washington was selected as commander in chief of the Continental Army and took command at Cambridge, Massachusetts, on July 3, 1775.

Inadequately supported and sometimes covertly sabotaged by the Congress, in charge of troops who were inexperienced, badly equipped and impatient of discipline, Washington conducted the war on the policy of avoiding major engagements with the British and wearing them down by harassing tactics. His able generalship, along with the French alliance and the growing weariness within Britain, brought the war to a conclusion with the surrender of Cornwallis at Yorktown on October 19, 1781.

The chaotic years under the Articles of Confederation led Washington to return to public life in the hope of promoting the formation of a strong central government. He presided over the Constitutional Convention and yielded to the universal demand that he serve as first President. In office, he sought to unite the nation in the service of establishing the authority of new government at home and abroad. Greatly distressed by the emergence of the Hamilton-Jefferson rivalry, he worked to maintain neutrality but actually sympathized more with Hamilton. Following his unanimous re-election in 1792, his second term was dominated by the Federalists. His Farewell Address rebuked party spirit and warned against foreign entanglements.

He died at Mt. Vernon on December 14, 1799. Tall, dignified and impressive, Washington gave a public impression of austerity, though he was capable of gaiety in private. His life was characterized by a

strict sense of duty to his people. The standard biographies are by Fitzpatrick, Ford, Hughes and Stephenson.

JOHN ADAMS

was born on October 30 (October 19, old style), 1735, at Braintree (now Quincy), Massachusetts. A Harvard graduate, he considered teaching and the ministry but finally turned to law and was admitted to the bar in 1758. He opposed the Stamp Act, served as lawyer for patriots indicted by the British and, by the time of the Continental Congresses, was in the vanguard of the movement for independence. In 1778 he went to France as commissioner. Subsequently he helped negotiate the peace treaty with Britain, and in 1785 became the U. S. envoy to London. Resigning in 1788, he was elected Vice President under Washington, and was re-elected in 1792.

Though a Federalist, Adams did not get along with Hamilton who sought to prevent his election to the presidency in 1796, and thereafter intrigued against his administration. Adams was chosen with 71 electoral votes to 68 for his closest competitor, Thomas Jefferson, who became Vice President. In 1798 Adams' independent policy averted a war with France but completed the break with Hamilton and the right-wing Federalists while, at the same time, the enactment of the Alien and Sedition Acts, directed against foreigners and against critics of the government, exasperated the Jeffersonian opposition. The split between Adams and Hamilton elected Jefferson in 1800. Adams retired to his home in Quincy, Massachusetts. He later corresponded with Jefferson and they died on the same day, July 4, 1826.

Stout, somewhat vain and irascible, Adams was honest, fearless and essentially fair-minded. His *Defence of the Constitutions of Government of the United States* (1787) contains original and striking if conservative political ideas. He married Abigail Smith in 1764, and their life together was long and happy. The standard biographies are by Morse and Chinard.

THOMAS JEFFERSON

was born on April 13 (April 2, old style), 1743, at Shadwell in Goochland (now Albemarle) County, Virginia. A William and Mary graduate, he studied law but from the start showed an interest in science and philosophy. His literary skill and political clarity brought him to the forefront

of the revolutionary movement in Virginia. As delegate to the Continental Congress, he drafted the Declaration of Independence. In 1776 he entered the Virginia House of Delegates and initiated a comprehensive reform program for the abolition of feudal survivals in land tenure and the separation of church and state.

In 1779 he became governor, but constitutional limitations on his power combined with his own lack of executive energy caused an unsatisfactory administration, culminating in Jefferson's virtual abdication when the British invaded Virginia in 1781. He now retired to his beautiful home at Monticello, to his wife, Martha Wayles Skelton, whom he had married in 1772 and who died in 1782, and to his children.

Jefferson's *Notes on Virginia* (1784-85) illustrate his many-faceted interests, his limitless intellectual curiosity, his deep faith in agrarian democracy. Sent to Congress in 1783, he helped lay down the decimal system and drafted basic reports on the organization of the western lands. In 1785 he was appointed minister to France, where the Anglo-Saxon liberalism he had drawn from Locke was stimulated by contact with the thought which would soon ferment in the French Revolution. In 1789 Washington appointed him Secretary of State. While favoring the Constitution and a strengthened central government, Jefferson came to believe that Hamilton contemplated the establishment of a monarchy. Growing differences resulted in Jefferson's resignation on Dec. 31, 1793.

Elected Vice President in 1796, Jefferson continued to serve as spiritual leader of the opposition to Federalism, particularly to the repressive Alien and Sedition Acts. He was elected President in 1801 by the House of Representatives as a result of Hamilton's decision to throw the Federalist votes to him rather than to Aaron Burr, who had tied him in electoral votes. The purchase of Louisiana from France in 1803, though in violation of his earlier constitutional scruples, was the most notable act of his administration. Re-elected in 1804 with 162 electoral votes to 14 for the Federalist Charles C. Pinckney, Jefferson tried desperately during his second term to keep the United States out of the Napoleonic Wars in Europe, employing to this end the unpopular embargo policy.

After his retirement to Monticello in 1809, he developed his interest in education, founding the University of Virginia and watching its development with never-flagging interest. He died at Monticello on July 4, 1826. Tall, loose-jointed, a poor speaker, Jefferson had an enormous variety of interests and skills, ranging from education and science to architecture and music. Economically his conception of democracy presupposed an essentially rural

community of small freeholds; but his deep and abiding faith in the common man provides inspiration for future generations. The standard biographies are by Chinard, Bowers, Kimball, Randall and Malone.

JAMES MADISON

was born in Port Conway, Virginia, on March 16, 1751 (March 5, 1750/1, old style). A Princeton graduate, he joined the struggle for independence on his return to Virginia in 1771. In the seventies and eighties he was active both in state politics, where he championed the Jefferson reform program, and in the Continental Congress. He was influential in the Constitutional Convention as leader of the group favoring a strong central government and as recorder of the debates; and he subsequently wrote, in collaboration with Alexander Hamilton and John Jay, the *Federalist* papers to aid the campaign for the adoption of the Constitution.

In the new Congress, Madison soon emerged as the leader in the House of the men who opposed Hamilton's financial program and his pro-British leanings in foreign policy. Retiring from Congress in 1797, he continued active in Virginia and drafted the Virginia Resolution protesting the Alien and Sedition Acts. His intimacy with Jefferson made him natural choice for Secretary of State in 1801.

In 1809 Madison succeeded Jefferson as President, with 122 electoral votes to 47 for the Federalist, C. C. Pinckney, and 6 scattering. His attractive wife, Dolly Payne Todd, whom he married in 1794, brought a new social sparkle to the executive mansion. In the meantime, increasing tension with Britain culminated in the War of 1812—a war for which the United States was unprepared, and for which Madison lacked the executive talent to clear out incompetence and mobilize the nation's energies. Madison was re-elected in 1812, with 128 electoral votes to 89 for the Federalist, De Witt Clinton. In 1814 the British actually captured Washington and forced Madison to flee to Virginia.

In his domestic program, Madison capitulated to the Hamiltonian policies that he had resisted twenty years before, signing bills to establish a United States Bank and a higher tariff. Following his presidency, he remained in retirement in Virginia until his death on June 28, 1836. Small, wrinkled, unimpressive, Madison had an acute political intelligence but lacked executive force. The standard lives are by Hunt, Brant and Rives.

JAMES MONROE

was born on April 28, 1758, in Westmoreland County, Virginia. A William and Mary graduate, he served in the army during

the first years of the Revolution and was wounded at Trenton. He then entered Virginia politics and later national politics under the sponsorship of Jefferson. In 1786 he married Eliza Kortright.

Fearing centralization, Monroe opposed the adoption of the Constitution and, as senator from Virginia, was highly critical of the Hamiltonian program. In 1794 he was appointed minister to France where his ardent sympathies with the Revolution exceeded the wishes of the State Department. A troubled diplomatic career ended with his recall in 1796. From 1799 to 1802 he was governor of Virginia. In 1803 Jefferson sent him to France to help negotiate the Louisiana Purchase and for the next few years he was active in various continental negotiations.

In 1808 Monroe flirted with the radical wing of the Republican party, which opposed Madison's candidacy; but the presidential boom came to naught and, after a brief term as governor of Virginia in 1811, Monroe accepted Madison's offer of the State Department. During the war he vainly sought a field command and served as Secretary of War from Sept., 1814, to Mar., 1815.

Elected President in 1816 with 183 electoral votes to 34 for the Federalist Rufus King, and re-elected without opposition in 1820, Monroe, the last of the Virginia dynasty, pursued the course of systematic tranquilization which won for his terms the name "the era of good feeling." He continued Madison's surrender to the Hamiltonian domestic program, signed the Missouri Compromise, acquired Florida and, with the able assistance of his Secretary of State, John Quincy Adams, promulgated the Monroe Doctrine in 1823, declaring against foreign colonization or intervention in the Americas. He died in New York City on July 4, 1831.

A sound man of medium abilities, Monroe possessed qualities of judgment rather than of leadership. The standard biographies are by Morgan, Gilman and Styron.

JOHN QUINCY ADAMS

was born on July 11, 1767, at Braintree (now Quincy), Massachusetts, the son of John Adams. He spent his early years in Europe with his father, graduated from Harvard and entered law practice. His anti-Jeffersonian newspaper articles won him political attention. In 1794 he became minister to the Netherlands, the first of several diplomatic posts which occupied him until his return to Boston in 1801. In 1797 he married Louisa Catherine Johnson.

In 1803 he was elected to the Senate, nominally as a Federalist, but his repeated displays of independence on such issues as the Louisiana Purchase and the embargo caused his party to compel his resignation

and ostracize him socially. In 1809 Madison rewarded him for his support of Jefferson by appointing him minister to St. Petersburg. He helped negotiate the Treaty of Ghent in 1814 and in 1815 became minister to London. In 1817 Monroe appointed him Secretary of State where he served with great distinction, gaining Florida from Spain without hostilities and playing an equal part with Monroe in formulating the Monroe Doctrine.

When no presidential candidate received a majority of electoral votes in 1824, Adams, with the support of Henry Clay, was elected by the House in 1825 over Andrew Jackson who had the original plurality. Adams had ambitious plans of government activity to foster internal improvements and promote the arts and sciences; but congressional obstructionism combined with his own unwillingness or inability to play the role of a politician meant that little was accomplished. Retiring to Quincy after his defeat in 1828, he was elected to the House of Representatives in 1831 where, though nominally a Whig, he pursued as ever an independent course. He led the fight to force Congress to receive anti-slavery petitions and fathered the Smithsonian Institution.

Stricken on the floor of the House, he died on February 23, 1848. Tactless, brusque, conscientious, a rough and savage debater, Adams spared neither himself nor his enemies. His long and detailed *Diary* gives a unique picture of the personalities and politics of the times. The standard biographies are by Morse and Clark.

ANDREW JACKSON

was born on March 15, 1767, in what is now generally agreed to be Waxhaw, South Carolina. After a turbulent boyhood as an orphan and a British prisoner, he moved west to Tennessee where he soon qualified for law practice but found time for such frontier pleasures as horse racing, cock-fighting and dueling. His marriage to Rachel Donelson Robards in 1791 was complicated by subsequent legal uncertainties about the status of her divorce. During the seventeen-nineties Jackson served in the Tennessee constitutional convention, the federal House of Representatives, the federal Senate and the Tennessee supreme court.

After some years as a country gentleman, living at the Hermitage near Nashville, Jackson in 1812 was given command of Tennessee troops sent against the Creeks. He defeated the Indians at Horseshoe Bend in 1814; subsequently he became a major general and won the Battle of New Orleans over veteran British troops though after the treaty of peace had been signed at Ghent. In 1818 General Jackson invaded Florida, captured Pensacola and hanged two Englishmen named Arbuthnot and

Ambrister, creating an international incident. A presidential boom began for him in 1821 and in its service he returned to the Senate (1823-25). Though he won a plurality of electoral votes in 1824, he lost in the House when Clay threw his strength to Adams; he won easily in 1828 by an electoral vote of 178 to 83.

As President, Jackson greatly expanded the power and prestige of the presidential office and carried through an unexampled program of domestic reform, vetoing the bill to extend the United States Bank, moving toward a hard-money currency policy and checking the program of federal internal improvements. He also vindicated federal authority against South Carolina with its doctrine of nullification and against France on the question of debts. The support given his policies by the workmen of the East as well as by the farmers of the East, West and South resulted in his triumphant re-election in 1832 over Clay by an electoral vote of 219 to 49, with 18 scattering and 2 not cast.

After watching the inauguration of his hand-picked successor, Martin Van Buren, Jackson retired to the Hermitage where he maintained a lively interest in national affairs until his death on June 8, 1845. A tall, dignified man with a drawn and wrinkled face, Jackson has been endowed by partisan historians with a violence and irascibility he appears not to have possessed. His great contribution was to adjust the presidential office and the democratic doctrines of Jefferson to the new situation created by the Industrial Revolution. The standard biographies are by James, Bassett and Parton.

MARTIN VAN BUREN

was born on December 5, 1782, at Kinderhook, New York. After graduating from the village school, he became a law clerk, entered practice in 1803 and soon became active in state politics as state senator and attorney general. In 1821 he was elected to the United States Senate. He threw the support of his efficient political organization, known as the Albany Regency, to William H. Crawford in 1824 and to Jackson in 1828. After leading the opposition to Adams' administration in the Senate, he served briefly as governor of New York and resigned to become Jackson's Secretary of State. He soon became on close personal terms with Jackson and played an important part in turning the Jacksonian program from the lines intended by his original Western backers.

In 1832 Van Buren became Vice President; in 1836, President, with an electoral vote of 170 against 124 scattered among four opponents. The Panic of 1837 overshadowed his term. He attributed it to

the overexpansion of the credit and favored the establishment of an independent treasury as repository for the federal funds. In 1840 he established a ten-hour day on public works. Defeated by Harrison in 1840, he was the leading contender for the Democratic nomination in 1844 until he publicly opposed immediate annexation of Texas and was subsequently beaten by the Southern delegations at the Baltimore convention. This incident increased his growing misgivings about the slave power.

After working behind the scenes among the antislavery Democrats, Van Buren joined in the movement which led to the Free-Soil party and became its candidate for President in 1848. He subsequently returned to the Democratic party while continuing to object to its pro-Southern policy. He died in Kinderhook on July 24, 1862. His *Autobiography* throws valuable sidelights on the political history of the times.

Small, erect, dapper, Van Buren had a reputation for slick politicking which won him such sobriquets as the Little Magician and the Red Fox of Kinderhook; but, as his later career showed, he was capable of taking firm and unpopular stands on public issues. His wife Hannah Hoes, whom he married in 1807, died in 1819.

The standard biographies are by Shepard and Lynch.

WILLIAM HENRY HARRISON

was born in Charles City County, Virginia, on February 9, 1773. Joining the army in 1791, he was active in Indian fighting in the Northwest, became secretary of the Northwest Territory in 1798 and governor of Indiana in 1800. He married Anna Symmes in 1795. Growing discontent over white encroachments on Indian lands led to the formation of an Indian alliance under Tecumseh to resist further aggressions. In 1811 Harrison won a nominal victory over the Indians at Tippecanoe and in 1813 a more decisive one at the Battle of the Thames, where Tecumseh was killed.

After resigning from the army in 1814, Harrison had an obscure career in politics and diplomacy, ending up in twenty years as a county recorder in Ohio. Nominated for President in 1835 as a military hero whom the conservative politicians hoped to be able to control, he ran surprisingly well against Van Buren in 1836. Four years later he defeated Van Buren by an electoral vote of 234 to 60 but caught pneumonia and died in Washington a month after his inauguration, April 4, 1841. Harrison's qualities were those of a soldier rather than of a statesman or political leader. The standard biographies are by Cleaves and Goebel.

JOHN TYLER

was born in Charles City County, Virginia, on March 29, 1790. A William and Mary graduate, he entered law practice and politics, serving in the House of Representatives (1816-21) and later as governor of Virginia (1825-27), and as senator. A thorough-going strict constructionist, he supported Crawford in 1824 and Jackson in 1828 but broke with Jackson over his Bank policy and became a member of the Southern state-rights group which co-operated with the Whigs. In 1836 he resigned from the Senate rather than follow instructions from the Virginia legislature to vote for a resolution expunging censure of Jackson from the Senate record.

Elected Vice President on the Whig ticket in 1840, Tyler succeeded to the presidency on Harrison's death. His strict-constructionist views soon caused a split with the Henry Clay wing of the Whig party and a stalemate on domestic questions. Tyler's more considerable achievements were his support of the Webster-Ashburton Treaty with Britain and his success in bringing about the annexation of Texas through joint congressional resolution.

After his presidency he lived in retirement in Virginia until the outbreak of the Civil War when he emerged briefly as chairman of a peace convention and then as delegate to the provisional Congress of the Confederacy. He died on January 18, 1862. He was married first to Letitia Christian March in 1813 and, two years after her death in 1842, to Julia Gardiner. Witty, amiable, courteous, Tyler was a Virginia gentleman whose presidency was hamstrung by the basic contradiction between his own ideas and those of the party which put him on the ticket as Vice President. The standard biographies are by Chitwood and Tyler.

JAMES KNOX POLK

was born in Mecklenburg County, North Carolina, on November 2, 1795. A graduate of the University of North Carolina, he moved west to Tennessee, was admitted to the bar and soon became prominent in state politics. In 1825 he was elected to the House of Representatives where he opposed Adams and, after 1829, became Jackson's floor leader in the fight against the Bank. In 1835 he became Speaker of the House. In 1839 he was elected governor of Tennessee but was beaten in tries for re-election in 1841 and 1843.

The supporters of Van Buren for the Democratic nomination in 1844 counted on Polk as his running mate; but, when Van Buren's stand on Texas alienated Southern support, the convention swung to Polk on the ninth ballot. He was elected over Henry Clay, the Whig candidate, by an

electoral vote of 170 to 105. Rapidly disillusioning those who thought that he would not run his own administration, Polk proceeded steadily and precisely to achieve four major objectives—the acquisition of California, the settlement of the Oregon question, the reduction of the tariff and the establishment of the independent treasury. He also enlarged the Monroe Doctrine to exclude all non-American intervention in American affairs, whether forcible or not, and he forced Mexico into a war which he waged to a successful conclusion. His wife Sarah Childress, whom he married in 1824, was a woman of charm and ability. Polk died in Nashville, Tennessee, on June 15, 1849.

Serious, hardworking, lacking in color, Polk has long been underrated by historians who mistakenly regarded him as a slaveholders' puppet; in fact, few presidents have so thoroughly controlled their own administration or have so ably accomplished the purposes they set for themselves. Polk's *Diary* reflects the mood and problems of his presidency. The standard biography is by McCormac.

ZACHARY TAYLOR

was born at Montebello, Orange County, Virginia, on November 24, 1784. Embarking on a military career in 1808, Taylor fought in the War of 1812, the Black Hawk War and the Seminole War, holding in between garrison jobs on the frontier or desk jobs in Washington. A brigadier general as a result of his victory over the Seminoles at Lake Okeechobee (1837), Taylor held a succession of Southwestern commands and in 1846 established a base on the Rio Grande, where his forces engaged in hostilities which precipitated the war with Mexico. He captured Monterrey in Sept., 1846, and, disregarding Polk's orders to stay on the defensive, defeated Santa Anna at Buena Vista in February, 1847, ending the war in the northern provinces.

Though Taylor had never cast a vote for President, his party affiliations were Whiggish, and his availability was increased by his difficulties with Polk. He was elected President over the Democrat Lewis Cass by an electoral vote of 163 to 127. During the revival of the slavery controversy, which was to result in the Compromise of 1850, Taylor began to take an increasingly firm stand against appeasing the South; but he died in Washington on July 9, 1850, in the midst of the fight over the Compromise. He married Margaret Mackall Smith in 1810. His bluff and simple soldierly qualities won him the name of Old Rough and Ready. During his brief term as President he displayed a growing insight into political questions. The standard biographies are by Hamilton and by Bent and McKinley.

MILLARD FILLMORE

was born at Locke, Cayuga County, New York, on January 7, 1800. A lawyer, he entered politics as an Antimason under the sponsorship of Thurlow Weed, editor and party boss, and subsequently followed Weed into the Whig party. He served in the House of Representatives (1833-35 and 1837-43) and played a leading role in writing the tariff of 1842. Defeated for governor of New York in 1844, he became comptroller in 1848, was put on the Whig ticket with Taylor as a concession to the Clay wing of the party and became President upon Taylor's death in 1850.

As President, Fillmore broke with Weed and William H. Seward and associated himself with the pro-Southern Whigs, supporting the Compromise of 1850. Defeated for the Whig nomination in 1852, he ran for President in 1856 as candidate of the American or Know-Nothing party, which sought to unite the country against foreigners in the alleged hope of diverting it from the explosive slavery issue. Fillmore opposed Lincoln during the Civil War. He died in Buffalo on March 8, 1874. He was married in 1826 to Abigail Powers, who died in 1853, and in 1858 to Caroline Carmichael McIntosh. Urbane, gracious, colorless and weak, Fillmore was an undistinguished President. The standard biography is by Griffiths.

FRANKLIN PIERCE

was born at Hillsboro, New Hampshire, on November 23, 1804. A Bowdoin graduate and lawyer, he won rapid political advancement in the Democratic party, in part because of the prestige of his father, Governor Benjamin Pierce. By 1831 he was Speaker of the New Hampshire House of Representatives; from 1833 to 1837 he served in the federal House and from 1837 to 1842 in the Senate. His wife, Jane Means Appleton, whom he had married in 1834, disliked Washington and the somewhat dissipated life led by Pierce; and in 1842 Pierce, resigning from the Senate, took up a successful law practice in Concord, New Hampshire.

During the Mexican War Pierce was a brigadier general. Thereafter he continued to oppose antislavery tendencies within the Democratic party. As a result, he was the Southern choice to break the deadlock at the Democratic convention of 1852 and was nominated on the 49th ballot. Pierce rolled up 254 electoral votes to 42 for Winfield Scott, the Whig candidate.

As President, Pierce followed a course of appeasing the South at home and of playing with schemes of territorial expansion abroad. The failure of both his foreign and domestic policies prevented his renomination; and he died in Concord, New Hampshire, on October 8, 1869, in relative ob-

scurity. A kindly and courteous person, Pierce was weak, unstable and lacking in presidential qualities. The standard biography is by Nichols.

JAMES BUCHANAN

was born near Mercersburg, Pennsylvania, on April 23, 1791. A Dickinson graduate and a lawyer, he entered Pennsylvania politics as a Federalist. With the disappearance of the Federalist party, he became a Jacksonian Democrat. He served with ability in the House (1821-31), as minister to St. Petersburg (1832-33) and in the Senate (1834-45), and in 1845 became Polk's Secretary of State. Disappointed in the presidential nomination in 1852, Buchanan became minister to Britain in 1853 where he participated with other American diplomats in Europe in drafting the expansionist Ostend Manifesto.

In 1856 Buchanan received the Democratic nomination and won the election, gaining 174 electoral votes to 114 for John C. Frémont, the Republican candidate, and 8 for Millard Fillmore, American party. The growing crisis over slavery presented Buchanan with problems he lacked the will to tackle. His appeasement of the South alienated the Stephen Douglas wing of the Democratic party without reducing Southern militancy on slavery issues. While denying the right of secession, Buchanan also denied that the federal government could do anything about it. He supported the administration during the Civil War and died in Lancaster, Pennsylvania, on June 1, 1868.

The only President to remain a bachelor throughout his term, Buchanan used his charming niece Harriet Lane as White House hostess. Legalistic, indecisive and timorous as President, Buchanan filled his other public offices capably. The standard biography is by Curtis.

ABRAHAM LINCOLN

was born in Hardin (now Larue) County, Kentucky, on February 12, 1809. His family moved to Indiana and then to Illinois, and Lincoln gained what education he could along the way. While reading law, he worked in a store, managed a mill, surveyed, and split rails. In 1834 he went to the state legislature as a Whig and became the party's floor leader. For the next twenty years he remained in law practice in Springfield, except for a single term (1847-49) in Congress where he denounced the Mexican War. In 1855 he was a candidate for senator and in 1856 he joined the new Republican party.

A leading but unsuccessful candidate for the vice-presidential nomination with Frémont, Lincoln gained national attention in 1858 when, as Republican candidate for

senator from Illinois, he engaged in a series of debates with Stephen A. Douglas, the Democratic candidate. He lost the senatorial election, but continued to prepare the way for the 1860 Republican convention and was rewarded with the presidential nomination on the third ballot. He polled 180 electoral votes, as against the 123 of his three opponents, but had only a plurality of the popular vote.

From the start, Lincoln made clear that, unlike Buchanan, he believed the national government had the power to crush the rebellion. Not an abolitionist, he held the slavery issue subordinate to that of preserving the Union but soon perceived that the war could not be brought to a successful conclusion without freeing the slaves. His administration was hampered by the incompetence of many Union generals, the inexperience of the troops and the harassing political tactics both of the Republican Radicals, who favored a hard policy toward the South, and the Democratic Copperheads, who desired a negotiated peace. The Gettysburg Address of November 19, 1863, marks the high point in the record of American eloquence. His patient search for a winning combination finally brought Generals Ulysses S. Grant and William T. Sherman to the top; and their series of victories in 1864 dispelled the mutterings from both Radicals and Peace Democrats which at one time seemed to threaten Lincoln's re-election. He received 212 electoral votes to 21 for George B. McClellan, the Democratic candidate. His inaugural address urged leniency toward the South: "With malice toward none, with charity for all . . . let us strive on to finish the work we are in; to bind up the nation's wounds . . ." This policy aroused growing opposition on the part of the Republican Radicals, but Lincoln was shot by John Wilkes Booth at Ford's Theater, Washington, on April 14, 1865, before the matter could be put to test. He died the following day.

Lincoln's marriage to Mary Todd in 1842 was often unhappy and turbulent, in part because of his wife's pronounced instability. By his remarkable literary artistry, his essential patience and devotion, his profound sense of the importance of government by, for and of the people, by the manner of his life and of his death, Lincoln has won a unique place in the hearts of Americans. The standard biographies are by Sandburg, Herndon, Nicolay and Hay.

ANDREW JOHNSON

was born at Raleigh, North Carolina, on December 29, 1808. Self-educated, he became a tailor in Greeneville, Tennessee, but soon went into politics where he rose steadily. From 1843 to 1853 he served in the House of Representatives, 1853-57 as governor of Tennessee and in 1857 was

elected Senator. Politically he was a Jacksonian Democrat, and his specialty was the fight for a more equitable land policy. Alone among the Southern Senators, he stood by the Union during the Civil War. In 1862 he became war governor of Tennessee and carried out a thankless and difficult job with great courage. Johnson became Lincoln's running mate in 1864 as result of an attempt to give the ticket a nonpartisan and nonsectional character. Succeeding to the presidency on Lincoln's death, Johnson sought to carry out his policy but without his political skill. The result was a hopeless conflict with the Radical Republicans who dominated Congress, passed measures over Johnson's vetoes and attempted to limit the power of the executive concerning appointments and removals. The conflict culminated with Johnson's impeachment for attempting to remove his disloyal Secretary of War in defiance of the Tenure of Office Act which required senatorial concurrence for such dismissals. The opposition failed by one vote to get the two-thirds necessary for conviction.

After his presidency, Johnson maintained an interest in politics and in 1875 was elected to the Senate. He died near Carter Station, Tennessee, on July 31, 1875. He married Eliza McCardle in 1827. An honest, courageous and intelligent man, Johnson lacked the tact, patience and self-control to be an effective President.

The standard biographies are by Winston, Stryker and Milton.

ULYSSES SIMPSON GRANT

was born (as Hiram Ulysses Grant) at Point Pleasant, Ohio, on April 27, 1822. He finished West Point in 1843 and served without particular distinction in the Mexican War. In 1848 he married Julia Dent. He resigned from the army in 1854, following warnings from his commanding officer about his drinking habits, and for the next six years held a wide variety of jobs in the Middle West. With the outbreak of the Civil War, he sought a command and soon, to his surprise, was made a brigadier general. His continuing successes in the western theaters, culminating in the capture of Vicksburg in 1863, brought him national fame and soon the command of all the Union armies. His dogged, implacable policy of concentrating on dividing and destroying the Confederate armies brought the war to an end in 1865. In 1866 he was made full general.

Grant's relations with Johnson grew steadily worse; and in 1868, as the Republican candidate for President, Grant was elected with 214 electoral votes to 80 for the Democrat Horatio Seymour. From the start Grant showed his unfitness for the office. His cabinet was weak, his do-

mestic policy was confused, many of his intimate associates were corrupt. The notable achievement in foreign affairs was the settlement of controversies with Great Britain in the Treaty of London (1871), negotiated by his able Secretary of State, Hamilton Fish.

Nominated for a second term, he defeated Horace Greeley, the Democratic and Liberal Republican candidate, 286 votes to 63. The Panic of 1873 created difficulties for his second term.

After retiring from office, Grant toured Europe for two years and returned in time to accede to a third-term boom, but was beaten in the convention of 1880. Illness and bad business judgment darkened his last years, but he worked steadily at the *Personal Memoirs* which were to be so successful when published after his death at Mount McGregor, near Saratoga, New York, on July 23, 1885. Inarticulate, taciturn, loyal to his friends, he was an able general who should never have accepted the presidency. The standard biographies are by Hesseltine and Woodward.

RUTHERFORD BIRCHARD HAYES

was born at Delaware, Ohio, on October 4, 1822. A graduate of Kenyon College and the Harvard Law School, he practiced law in Sandusky and then in Cincinnati, Ohio. In 1852 he married Lucy Webb. A Whig, he joined the Republican party in 1855. During the Civil War he rose to the rank of major general. He served in Congress from 1865 to 1867 and then confirmed a reputation for honesty and efficiency in two terms as governor of Ohio. His re-election as governor in 1875 made him the logical candidate for those Republicans who wished to stop James G. Blaine in 1876, and he was successfully nominated.

The result of the election was for some time in doubt and hinged upon disputed returns from South Carolina, Louisiana, Florida and Oregon. Samuel J. Tilden, the Democratic candidate, had the larger popular vote but was adjudged by the strictly partisan decisions of the Electoral Commission to have one less electoral vote, 185 to 184. The national acceptance of this result was due in part to the general understanding that Hayes would pursue a conciliatory policy toward the South. He withdrew the troops from the South, took a conservative position on financial and labor issues and urged civil service reform.

Hayes served only one term by his own wish and spent the rest of his life in various humanitarian endeavors. He died in Fremont, Ohio, on January 17, 1893. A hard-working, conscientious, sensible man, Hayes represented the best type of Republican of his day. The standard biographies are by Eckenrode and Williams.

JAMES ABRAM GARFIELD,

the last President to be born in a log cabin, was born at Cuyahoga County, Ohio, on November 19, 1831. A Williams graduate, he taught school for a time and entered Republican politics in Ohio. In 1858 he married Lucretia Rudolph. During the Civil War he had a promising career, rising to the rank of major general of volunteers; but in 1863 he was elected to the House of Representatives where he served until 1880. His oratorical and parliamentary abilities soon made him the leading Republican in the House, though his record was marred by his unorthodox acceptance of a fee in the DeGolyer paving contract case and by suspicions of his complicity in the Crédit Mobilier scandal.

In 1880 Garfield was elected to the Senate, but instead became the presidential candidate on the 36th ballot as a result of a deadlock in the Republican convention. He gained 214 electoral votes to 155 for General Winfield Scott Hancock, the Democratic candidate. Garfield's administration was barely under way when he was shot by Charles J. Guiteau, a disappointed office seeker, in July. He died in Elberon, New Jersey, on September 19, 1881. An attractive and eloquent man, he was much beloved in his day.

The standard biographies are by Smith and Caldwell.

CHESTER ALAN ARTHUR

was born at Fairfield, Vermont, on October 5, 1830. A graduate of Union College, he became a successful New York lawyer. In 1859 he married Ellen Herndon. During the Civil War he held administrative jobs in the Republican state administration and in 1871 was appointed collector of the Port of New York by Grant. This post gave him control over considerable patronage; and, though not personally corrupt, Arthur managed his power in the interests of the New York machine so openly that President Hayes in 1877 called for an investigation, and in 1878 Arthur was suspended from his responsibilities.

In 1880 Arthur was nominated for Vice President in the hope of conciliating the followers of Grant and the powerful New York machine. As President on Garfield's assassination, Arthur, stepping out of his familiar role as spoilsman, backed civil service reform, reorganized the cabinet and prosecuted political associates accused of post office graft. Losing machine support and failing to gain the reformers, he was not renominated. He died in New York City on November 18, 1886. A tall, handsome, dignified man with real administrative abilities, he was a better President than his previous record promised. The standard biography is by Howe.

STEPHEN GROVER CLEVELAND

was born at Caldwell, New Jersey, on March 18, 1837. He was admitted to the bar in Buffalo, New York, in 1859 and lived there as a lawyer, with occasional incursions into Democratic politics, for more than twenty years. He did not participate in the Civil War. As mayor of Buffalo in 1881, he carried through a reform program so ably that the Democrats ran him successfully for governor in 1882. In 1884 he won the Democratic nomination for President. The campaign contrasted Cleveland's spotless public career with the uncertain record of James G. Blaine, the Republican candidate, and Cleveland received enough Mugwump (Independent Republican) support to win by 219 to 182 electoral votes.

As President, Cleveland pushed civil service reform, opposed the pension grab and attacked the high tariff rates. While in the White House he married Frances Folsom (1886). Renominated in 1888, Cleveland was defeated by Benjamin Harrison, polling more popular but fewer electoral votes. In 1892 he was re-elected over Harrison, 277 to 145, with 22 votes for James B. Weaver, the Populist candidate. When the Panic of 1893 burst upon the country, Cleveland's attempts to solve it by sound-money measures alienated the free-silver wing of the party, while his tariff policy alienated the protectionists. In 1894 he sent troops to break the Pullman strike. In foreign affairs his firmness caused Great Britain to back down in the Venezuela border dispute.

In his last years Cleveland was an active and much respected public figure. He died in Princeton, New Jersey, on June 24, 1908. An honest, stubborn, high-principled man, Cleveland was an old-fashioned liberal in the nineteenth-century sense who was baffled by the new problems of industrial society. The standard biographies are by Nevins and McElroy.

BENJAMIN HARRISON

was born in North Bend, Ohio, on August 20, 1833, the grandson of William Henry Harrison. A graduate of Miami University, he took up the law in Indiana and became active in Republican politics. In 1853 he married Caroline Lavinia Scott. During the Civil War he rose to the rank of brigadier general. A sound-money Republican, he was elected senator from Indiana in 1880 and in 1888 received the Republican nomination for President on the 8th ballot. Though behind on the popular vote, he won over Grover Cleveland in the electoral college by 233 to 168.

As President, Benjamin Harrison failed to please either the bosses or the reform element in the party. In foreign affairs he backed Secretary of State Blaine whose policy foreshadowed later American im-

perialism. In 1892 Harrison was renominated, but Cleveland beat him in the election. His wife died in the White House in 1892, and Harrison married her niece, Mary Scott (Lord) Dimmick, in 1896. After his presidency, he resumed law practice. He died in Indianapolis, Indiana, on March 13, 1901. Harrison was an honest man of very medium abilities.

WILLIAM MCKINLEY

was born in Niles, Ohio, on January 29, 1843. A graduate of Allegheny College, he rose from the ranks to become a major in the Civil War. Subsequently he opened a law office in Canton, Ohio, and in 1871 married Ida Saxton. Elected to Congress in 1876, he served there steadily till 1891, except for 1883-85. His faithful advocacy of business interests culminated in the passage of the highly protective McKinley Tariff of 1890. With the support of Mark Hanna, a shrewd Cleveland businessman interested in safeguarding tariff protection, McKinley became governor of Ohio in 1892 and Republican presidential candidate in 1896. The business community, alarmed by the progressivism of William Jennings Bryan, the Democratic candidate, spent considerable money to assure McKinley's victory which was by the margin of 271 to 176 in the electoral college.

The chief event of McKinley's administration was the war with Spain which resulted in our acquisition of the Philippines and other islands. With imperialism as an issue, McKinley defeated Bryan again in the election of 1900 by 292 to 155. On September 6, 1901, he was shot at Buffalo by Leon F. Czolgosz, an anarchist, and he died there on September 14.

The standard biography is by Olcott.

THEODORE ROOSEVELT

was born in New York City on October 27, 1858. A Harvard graduate, he was early interested in ranching, in politics and in writing picturesque historical narratives. He was a Republican member of the New York Assembly in 1882-84, an unsuccessful candidate for mayor of New York in 1886, a U. S. Civil Service Commissioner under Harrison, Police Commissioner of New York City in 1895 and Assistant Secretary of the Navy under McKinley in 1897. After exuding a belligerence which helped bring on the war with Spain, he resigned in 1898 to help organize a volunteer regiment named the Rough Riders and take a more direct part in the war. Always publicity-shrewd, he won the New York gubernatorial nomination in 1898 in spite of pronounced lack of enthusiasm on the part of the bosses.

After two years of T.R. in Albany, the New York bosses succeeded in getting him the vice-presidential nomination in 1900.

Roosevelt accepted it with reluctance, feeling that his career had been ruined. As President on McKinley's assassination, he perceived the new popular mood of progressivism and initiated a policy of trust busting, designed to control giant corporations. He also strengthened government powers over interstate commerce and launched a conservation program to save natural resources. In foreign affairs he pursued a truculent policy, permitting the instigation of a revolt in Panamá to dispose of Colombian objections to the Panama Canal and helping to maintain the balance of power in the East by bringing the Russo-Japanese war to an end. In 1904 he decisively defeated Alton B. Parker, his conservative Democratic opponent, by an electoral margin of 336 to 140.

Following his second term he went big-game hunting in Africa and toured Europe. On his return to the United States, his increasing coldness toward Taft led him to overlook his earlier disclaimer of third-term ambitions and to re-enter politics. Defeated by the machine in the Republican convention of 1912, he organized the Progressive party and polled more votes than Taft, though the split brought about the election of Wilson. From 1915 on, Roosevelt strongly favored intervention in the European war. He became deeply embittered at Wilson's refusal to allow him to raise a volunteer division. He died in Oyster Bay, New York, on January 6, 1919. He was married twice: in 1880 to Alice Hathaway Lee, who died in 1884; and in 1886 to Edith Kermit Carow.

The athletic advocate of the strenuous life, with his high voice, prominent teeth and thick glasses, Roosevelt captured the imagination of the American people. He was one of the great personalities of American history. The standard biography is by Pringle.

WILLIAM HOWARD TAFT

was born in Cincinnati, Ohio, on September 15, 1857. A Yale graduate, he entered Ohio Republican politics in the eighteen eighties. In 1886 he married Helen Herron. From 1887 to 1890, he served on the Ohio superior court; 1890-92, as solicitor general of the United States; 1892-1900, on the federal circuit court. In 1900 McKinley appointed him president of the Philippine Commission and in 1901 governor general. Taft had great success in pacifying the Filipinos, solving the problem of the church lands, improving economic conditions and establishing limited self-government. His period as Secretary of War 1904-08 further demonstrated his capacity as administrator and conciliator; and he was Roosevelt's hand-picked successor in 1908.

In the election he polled 321 electoral votes to 162 for William Jennings Bryan.

As President, though he carried on many of Roosevelt's policies, Taft got into increasing trouble with the progressive wing of the party and displayed mounting irritability and indecision. After his defeat in 1912, he became professor of constitutional law at Yale. In 1921 he was appointed Chief Justice of the United States. He died in Washington on March 8, 1930. Enormously large, deliberate and good-humored, Taft excelled as an administrator and judge, not as a political leader.

The standard biography is by Pringle.

THOMAS WOODROW WILSON

was born in Staunton, Virginia, on December 28, 1856. A Princeton graduate, he turned from law practice to post-graduate work in political science at Johns Hopkins University, receiving his Ph.D. in 1886. He taught at Bryn Mawr, Wesleyan and Princeton, and in 1902 was made president of Princeton. After an unsuccessful attempt to democratize the social life of Princeton, he welcomed an invitation in 1910 to be the Democratic gubernatorial candidate in New Jersey. His success in fighting the machine and putting through a reform program attracted national attention.

In 1912, after a protracted contest at Baltimore, Wilson won the Democratic nomination on the 46th ballot. In the election he received 435 electoral votes to 88 for Roosevelt and 8 for Taft. During his first term Wilson proceeded under the standard of the New Freedom to enact a program of domestic reform, including the Federal Reserve Act, the Clayton Anti-trust Act, the establishment of the Federal Trade Commission and other measures designed to restore competition in the face of the great monopolies. In foreign affairs, while privately sympathetic with the Allies, he strove to maintain strict neutrality in the European war and warned both sides against encroachments on American interests.

Re-elected in 1916 as a peace candidate, he tried to mediate between the warring nations; but, when the Germans resumed unrestricted submarine warfare in 1917, Wilson brought the United States into what he now believed was a war to make the world safe for democracy. He supplied the classic formulations of Allied war aims; and the armistice of November, 1918, was negotiated on the basis of Wilson's Fourteen Points. In 1919 he strove at Versailles to lay the foundations for enduring peace. He accepted the imperfections of the Versailles Treaty in the expectation that they could be remedied by action within the

League of Nations. He probably could have secured ratification of the treaty if he had adopted a more conciliatory attitude toward the mild reservationists; but his insistence on all or nothing eventually caused the diehard isolationists and diehard Wilsonites to unite in rejecting a compromise.

In September, 1919, Wilson suffered a paralytic stroke which limited his future activity. After the presidency he lived on in retirement in Washington, dying February 3, 1924. He was married twice—in 1885 to Ellen Louise Axson, who died in 1914, and in 1915 to Edith Bolling Galt. A man of high principle, inspiring eloquence and great intellectual ability, Wilson was the first leader to fire the imagination of the masses of the world with the vision of world peace. The standard biography is by Baker.

WARREN GAMALIEL HARDING

was born in Morrow County, Ohio, on November 2, 1865. After attending Ohio Central College, Harding became interested in journalism and in 1884 bought the *Marion (Ohio) Star*. In 1891 he married a wealthy widow, Florence Kling De Wolfe. As his paper prospered, he entered Republican politics, serving as state senator (1899–1903), and as lieutenant governor (1904–06). In 1910 he was defeated for governor but in 1914 was elected to the Senate. His reputation as orator made him keynoter in the 1916 convention.

When the 1920 Republican convention was deadlocked between Leonard Wood and Frank O. Lowden, Harding was made the dark-horse nominee on his solemn affirmation that there was no reason in his past that he should not be. Straddling the League question, Harding was elected easily, with 404 electoral votes to 127 for James M. Cox, his Democratic opponent. His cabinet contained some able men, but also some manifestly unfit for public office. Harding's own intimates were mediocre when they were not corrupt. The impending disclosure of scandals in the Interior and Justice departments and in the Veterans' Bureau, as well as political setbacks, profoundly worried him. On his return from Alaska in 1923, he died suddenly at San Francisco on August 2. A handsome and genial man, indiscriminating in his associates, lacking in political ideas or fortitude, Harding was totally unfitted for the presidency.

JOHN CALVIN COOLIDGE

was born in Plymouth, Vermont, on July 4, 1872. An Amherst graduate, he went into law practice at Northampton, Massachusetts, in 1897. He married Grace Anna Goodhue in 1905. He entered Republican

state politics, becoming successively mayor of Northampton, state senator, lieutenant governor and, in 1919, governor. His conduct in regard to the Boston police strike in 1919 won him a somewhat undeserved reputation for decisive action and brought him the Republican vice-presidential nomination in 1920. After Harding's death Coolidge handled the Washington scandals with care and finally managed to save the Republican party from public blame for the widespread corruption.

In 1924 Coolidge won re-election without difficulty, getting 382 electoral votes to 136 for the Democrat, John W. Davis, and 13 for Robert M. La Follette running on the Progressive ticket. His second term, like his first, was characterized by a general satisfaction with the existing economic order. He stated that he did not choose to run in 1928.

After his presidency, Coolidge lived quietly in Northampton, writing an unilluminating *Autobiography* and conducting a syndicated column. He died in Northampton, Massachusetts, on January 5, 1933. His dry, Yankee humor, his frugality and glumness made him a paradoxically popular President in the boom period. The standard biographies are by White and Fuess.

HERBERT CLARK HOOVER

was born at West Branch, Iowa, an August 10, 1874. A Stanford graduate, he worked from 1895 to 1913 as a mining engineer and consultant in North America, Europe, Asia, Africa and Australia. In 1899 he married Lou Henry. During the First World War he served with distinction as chairman of the American Relief Committee in London, as chairman of the Commission for Relief in Belgium and as United States Food Administrator. His political affiliations were still sufficiently indeterminate for him to be mentioned as a possibility for both Republican and Democratic nominations in 1920; but after the election he served both Harding and Coolidge as Secretary of Commerce.

In the election of 1928 Hoover received 444 electoral votes to 87 for Alfred E. Smith, the Democratic candidate. He soon faced the worst depression in the nation's history; but his attacks upon it were hampered by his devotion to the theory that the forces which brought the crisis would soon bring the revival, and then by his belief that in too many areas the federal government had no power to act. In a succession of vetoes he struck down measures proposing a national employment system or national relief; he reduced income tax rates; and only at the end of his term did he yield to popular pressure and set up agencies such as the Reconstruction Finance Corporation to make emergency loans to assist business.

After his 1932 defeat, Hoover returned to private business. In 1946, President Truman charged him with various world food missions; and from 1947 to 1949 and again from 1953 to 1955, he was head of the Commission on Organization of the Executive Branch of the Government.

FRANKLIN DELANO ROOSEVELT

was born in Hyde Park, New York, on January 30, 1882. A Harvard graduate, he attended Columbia Law School and was admitted to the New York bar. In 1910 he was elected to the New York state senate as a Democrat. Re-elected in 1912, he was appointed Assistant Secretary of the Navy by Woodrow Wilson in 1913. In 1920 his radiant personality and his war services resulted in his nomination for Vice President as James M. Cox's running mate. After his defeat, he returned to law practice in New York. In August, 1921, Roosevelt was stricken with infantile paralysis while at Campobello, New Brunswick. After a long and gallant fight against the disease he recovered partial use of his legs. In 1924 and 1928 he led the fight at the Democratic national conventions for the nomination of Governor Alfred E. Smith of New York; and in 1928 Roosevelt was himself induced to run for governor of New York. He was elected and was re-elected in 1930.

In 1932 Roosevelt received the Democratic nomination for President and immediately launched a campaign which brought new spirit to a weary and discouraged nation. He won the election over Herbert Hoover by a margin of 472 to 59 in the electoral college. His first term was characterized by an unfolding of the New Deal program, with greater benefits for labor, the farmers and the unemployed, and the progressive estrangement of most of the business community.

At an early stage Roosevelt became aware of the menace to world peace involved in the existence of totalitarian fascism, and from 1937 on he tried to focus public attention on the trend of events in Europe and Asia. As a result he was widely denounced as a warmonger. He was re-elected in 1936 over Alfred M. Landon by the overwhelming electoral margin of 523 to 8; and the gathering international crisis caused him to decide to run again in 1940. He defeated Wendell L. Willkie by a vote of 449 to 82.

Roosevelt's program to bring maximum aid to Britain and, after June, 1941, to Russia was opposed, until the Japanese attack on Pearl Harbor restored national unity. During the war Roosevelt shelved the New Deal in the interests of conciliating the business community, both in order to get full production during the war and to prepare the way for a united

acceptance of the peace settlements after the war. A series of conferences with Winston Churchill and Joseph Stalin laid down the bases for the postwar world. In 1944 he was elected to a fourth term, running against Governor Thomas E. Dewey of New York.

On April 12, 1945, Roosevelt died at Warm Springs, Georgia, shortly after his return from the Yalta Conference. His wife, Anna Eleanor Roosevelt, whom he married in 1905, is a woman of great ability who made significant contributions to her husband's policies. No President has been faced with so many staggering responsibilities, both at home and abroad.

HARRY S. TRUMAN

was born on a farm near Lamar, Missouri, on May 8, 1884. During the First World War he served in France with the 129th Field Artillery. He married Bess Wallace in 1919. After engaging briefly and unsuccessfully in the haberdashery business in Kansas City, Truman entered local politics. Under the sponsorship of Thomas Pendergast, Democratic boss of Missouri, he held a number of local offices, preserving his personal honesty in the midst of a notoriously corrupt political machine. In 1934 he was elected to the Senate and was re-elected in 1940. During his first term he was a loyal but quiet supporter of the New Deal; but in the course of his second term, an appointment as head of a Senate committee to investigate war production brought out his special qualities of honesty, common sense and hard work, and he won widespread respect.

Elected Vice President in 1944, Truman became President upon Roosevelt's death in 1945 and immediately had to face complex postwar problems, both domestic and foreign. His first attempts did not meet with marked success, and the Republicans won control of Congress in 1946. The next two years were distinguished by the Truman Doctrine, the Marshall Plan and civil-rights proposals; and his general record, highlighted by a vigorous Fair Deal campaign, brought about his unexpected and impressive re-election in 1948.

Truman's second term was primarily concerned with the Cold War with the Soviet Union, the implementing of the North Atlantic Pact, the United Nations police action in Korea, and the vast rearmament program with its accompanying problems of economic stabilization.

On Mar. 29, 1952, Truman announced that he would not run again for the Presidency. He campaigned actively for Adlai E. Stevenson. After Eisenhower's inauguration, Truman returned to his Independence, Missouri, home to write his memoirs. He further busied himself with the organization of the Harry S. Truman Library in Independence, Missouri.

DWIGHT DAVID EISENHOWER

was born in Denison, Texas, on October 14, 1890. His ancestors lived in Germany, and emigrated to America, settling in Pennsylvania, early in the 18th century. His father, David, had a general store in Hope, Kansas, which failed. After a brief time in Texas, the family moved to Abilene, Kansas.

After graduating from Abilene High School in 1909, Dwight Eisenhower did odd jobs for almost two years. He won an appointment to the Naval Academy at Annapolis, but it turned out that he was too old for admittance. Then he received an appointment in 1910 to West Point. He was graduated a 2nd lieutenant in 1915.

He did not see service in World War I, having been assigned to the 19th Infantry at Fort Sam Houston, Texas. There he met Mamie Geneva Doud, whom he married in Denver on July 1, 1916. Their first son died in infancy. Their second son is Major John Sheldon Doud Eisenhower.

A paper he wrote about 1930 attracted the attention of General Douglas MacArthur, then Chief of Staff, who asked that Eisenhower be assigned to his office. When MacArthur went to the Philippines as military adviser in 1935, Eisenhower accompanied him and remained with him until 1939.

General George C. Marshall brought him into the War Department General Staff and, in 1942, put him in command of the

Allied invasion of North Africa. In 1944, Eisenhower was made Supreme Allied Commander of the invasion of Europe.

After the war, Eisenhower served as Army Chief of Staff from November 1945 until February 1948, when he was appointed president of Columbia University.

In December 1950, President Truman recalled Eisenhower to active duty to command the North Atlantic Treaty Organization forces in Europe. He held this post until the end of May 1952.

In the Republican Convention of July 1952 in Chicago, Eisenhower won the Presidential nomination on the first ballot in a close race with Senator Robert A. Taft of Ohio. In November, he won the election, defeating Adlai E. Stevenson by an electoral vote of 442 to 89.

Eisenhower's Administration from 1952 to the fall of 1956 was marked by alternating periods of tension and relaxation in foreign affairs. On the home front, following a middle-of-the-road line, he did little to abandon the social policies of the New Deal-Fair Deal, but he sought wider state participation and the assumption of a larger responsibility by business for investment and employment. His illnesses in Sept. 1955 and June 1956 raised the question of his availability for a second term. He announced his candidacy on July 10, and was renominated. He was re-elected by a total of 457 electoral votes to 73 for Adlai E. Stevenson.

For later information, see Headline Stories of 1957.

How to Number the Presidents

Did Eisenhower take office as the 33rd President or as the 34th?

The difficulty started with Grover Cleveland. He became our 22nd President back in 1885. Then came Benjamin Harrison, who was obviously the 23rd President, serving from 1889-93. At this point, Cleveland returned to the White House for a second (but nonconsecutive) term.

Cleveland was still the same man who had been our 22nd President. But in his later term, it would look silly—some folks thought—to continue to call him our 22nd President. That would make the 22nd President follow the 23rd. Numbers should go in order—so ran the argument—and Cleveland should therefore be designated both as the 22nd President in his first term and as the 24th in his second term.

The people who argued the other way found an eloquent spokesman in John Kieran. He said: "Write down the names of all the Presidents, and you will only get 33. If you write Cleveland twice, you'll get 34—but in that case you've got

to write Franklin D. Roosevelt's name four times. Until they prove to me that Grover Cleveland was two men, Eisenhower can't be the 34th President."

The *Congressional Directory*, which must be considered the official final authority, grappled with the problem of numbering the Presidents. Until recent years, it has followed John Kieran's theory.

After the election of President Truman, and before the election of President Eisenhower, the *Congressional Directory* changed its official mind. In the 1956 *Congressional Directory*, Truman is the 33rd President, and Eisenhower is listed as the 34th. (Cleveland has two numbers—22nd and 24th.)

The 1957 *Congressional Directory* lists Presidents without numbering them—we don't know why. Although we are listing the Presidents on the basis of the *Congressional Directory* of 1956 we can't help thinking of John Kieran's remark: "Put the busts of all the Presidents in a row and count them and you will get 33, and only 33."

Presidents and Vice Presidents of the U. S.

Presidents & (parties) ¹	Born	State of birth	Religion	Died	Term	Age at inaug.	Age at death	Vice Presidents ²	State of birth
1. Washington (F) ³	Feb. 22, 1732	Va.	Episcopalian	Dec. 14, 1799	1789-1797	57	67	1. John Adams	Mass.
2. J. Adams (F)	Oct. 30, 1735	Mass.	Unitarian	July 4, 1826	1797-1801	61	90	2. Thomas Jefferson ⁴	Va.
3. Jefferson (DR)	Apr. 13, 1743	Va.	Deist	July 4, 1826	1801-1809	57	83	3. Aaron Burr	N. J.
4. Madison (DR)	Mar. 16, 1751	Va.	Episcopalian	June 28, 1836	1809-1817	57	85	4. George Clinton	N. Y.
5. Monroe (DR)	Apr. 28, 1758	Va.	Episcopalian	July 4, 1831	1817-1825	58	73	5. Elbridge Gerry ⁵	Mass.
6. J. Q. Adams (DR)	Feb. 11, 1767	Mass.	Unitarian	Feb. 23, 1848	1825-1829	57	80	6. Daniel D. Tompkins	N. Y.
7. Jackson (D)	Mar. 15, 1767	S. C.	Presbyterian	June 8, 1845	1829-1837	61	78	7. John C. Calhoun ⁷	S. C.
8. Van Buren (D)	Dec. 5, 1782	N. Y.	Reformed Dutch	July 24, 1862	1837-1841	54	79	8. Martin Van Buren	N. Y.
9. W. H. Harrison (W) ⁸	Feb. 9, 1773	Va.	Episcopalian	Apr. 4, 1841	1841-1841	68	68	9. Richard M. Johnson	Ky.
10. Tyler (D)	Mar. 29, 1790	Va.	Episcopalian	Jan. 18, 1862	1841-1845	51	71	10. John Tyler	Va.
11. Polk (D)	Nov. 2, 1795	N. C.	Methodist	June 15, 1849	1845-1849	49	53	11. George M. Dallas	Pa.
12. Taylor (W) ⁹	Nov. 24, 1784	Va.	Episcopalian	July 9, 1850	1849-1850	64	65	12. Millard Fillmore	N. Y.
13. Fillmore (W)	Jan. 7, 1800	N. Y.	Episcopalian	Mar. 8, 1874	1850-1853	50	74	13. William R. King ⁹	N. C.
14. Pierce (D)	Nov. 23, 1804	N. H.	Episcopalian	Oct. 8, 1869	1853-1857	48	64	14. John C. Breckinridge	Ky.
15. Buchanan (D)	Apr. 23, 1791	Pa.	Presbyterian	June 1, 1868	1857-1861	65	77	15. Hannibal Hamlin	Maine
16. Lincoln (R) ¹⁰	Feb. 12, 1809	Ky.	Liberal	Apr. 15, 1865	1861-1865	52	56	16. Andrew Johnson ¹¹	N. C.
17. Johnson (U) ¹¹	Dec. 29, 1808	N. C.	(¹²)	July 31, 1875	1865-1869	56	66	17. Schuyler Colfax	N. Y.
18. Grant (R)	Apr. 27, 1822	Ohio	Methodist	July 23, 1885	1869-1877	46	63	18. Henry Wilson ¹¹	N. H.
19. Hayes (R)	Oct. 4, 1822	Ohio	Methodist	Sept. 17, 1893	1877-1881	54	70	19. William A. Wheeler	N. Y.
20. Garfield (R) ¹²	Nov. 19, 1831	Ohio	Disciples of Christ	Jan. 19, 1881	1881-1881	49	49	20. Chester A. Arthur	Vt.
21. Arthur (R)	Oct. 5, 1830	Vt.	Episcopalian	Nov. 18, 1886	1881-1885	50	56	21. Thomas A. Hendricks ¹³	Ohio
22. Cleveland (D)	Mar. 18, 1837	N. J.	Presbyterian	June 24, 1908	1885-1889	47	71	22. Levi P. Morton	Vt.
23. B. Harrison (R)	Aug. 20, 1833	Ohio	Presbyterian	Mar. 13, 1901	1889-1893	55	67	23. Adlai E. Stevenson	Ky.
24. Cleveland (D)	Mar. 18, 1837	Ohio	Presbyterian	Mar. 13, 1901	1893-1897	55	67	24. Adlai E. Stevenson	Ky.
25. McKinley (R) ¹⁴	Jan. 29, 1843	Ohio	Methodist	Sept. 14, 1901	1897-1901	54	58	25. Garrett A. Hobart ¹⁵	N. J.
26. T. Roosevelt (R)	Oct. 27, 1858	N. Y.	Reformed Dutch	Jan. 6, 1919	1901-1909	42	60	26. Theodore Roosevelt	N. Y.
27. Taft (R)	Sept. 15, 1857	Ohio	Unitarian	Mar. 8, 1930	1909-1913	51	72	27. Charles W. Fairbanks	Ohio
28. Wilson (D)	Dec. 28, 1856	Va.	Presbyterian	Feb. 3, 1924	1913-1921	56	67	28. James S. Sherman ¹⁶	N. Y.
29. Harding (R) ¹⁵	Nov. 2, 1865	Ohio	Baptist	Aug. 2, 1923	1921-1923	55	57	29. Thomas R. Marshall	Ind.
30. Coolidge (R)	July 4, 1872	Vt.	Congregationalist	Jan. 5, 1933	1923-1929	51	60	30. Calvin Coolidge	Vt.
31. Hoover (R)	Aug. 10, 1874	Iowa	Quaker	.....	1929-1933	54	63	31. Charles Curtis	Ohio
32. F. D. Roosevelt (D) ¹⁶	Jan. 30, 1882	N. Y.	Episcopalian	Apr. 12, 1945	1933-1945	51	63	32. John N. Garner	Kans.
33. Truman (D)	May 8, 1884	Mo.	Baptist	.....	1945-1953	60	60	33. Henry A. Wallace	Iowa
34. Eisenhower (R)	Oct. 14, 1890	Tex.	Presbyterian	.....	1953-	62	62	34. Harry S. Truman	Mo.
								35. Alben W. Barkley	Ky.
								36. Richard M. Nixon	Calif.

Wives and Children of the Presidents of the United States

President	Wife's name	Year and place of wife's birth	Married	Wife Died	Children of President*	
					Sons	Daughters
Washington	Mrs. Martha Dandridge Custis	1732, Va.	1759	1802	..	..
John Adams	Abigail Smith	1744, Mass.	1764	1818	3	2
Jefferson	Mrs. Martha Wayles Skelton	1748, Va.	1772	1782	1	5
Madison	Mrs. Dorothy "Dolly" Payne Todd	1768, N. C.	1794	1849	..	..
Monroe	Eliza Kortright	1768, N. Y.	1786	1830	..	2
J. Q. Adams	Louisa Catherine Johnson	1775, England	1797	1852	3	1
Jackson	Mrs. Rachel Donelson Robards	1767, Va.	1791	1828	..	..
Van Buren	Hannah Hoes	1783, N. Y.	1807	1819	4	..
W. H. Harrison	Anna Symmes	1775, N. J.	1795	1834	6	4
Tyler	Letitia Christian	1790, Va.	1813	1842	3	4
	Julia Gardiner	1820, N. Y.	1844	1889	5	2
Polk	Sarah Childress	1803, Tenn.	1824	1891	..	..
Taylor	Margaret Smith	1788, Md.	1810	1852	1	5
Fillmore	Abigail Powers	1798, N. Y.	1826	1853	1	1
	Mrs. Caroline Carmichael McIntosh	1813, N. J.	1858	1881	..	..
Pierce	Jane Means Appleton	1806, N. H.	1834	1863	3	..
Buchanan	(Unmarried)	....	....	....	..	..
Lincoln	Mary Todd	1818, Ky.	1842	1882	4	..
Johnson	Eliza McCordle	1810, Tenn.	1827	1876	3	2
Grant	Julia Dent	1826, Mo.	1848	1902	3	1
Hayes	Lucy Ware Webb	1831, Ohio	1852	1889	7	1
Garfield	Lucretia Rudolph	1832, Ohio	1858	1918	5	2
Arthur	Ellen Lewis Herndon	1837, Va.	1859	1880	2	1
Cleveland	Frances Folsom	1864, N. Y.	1886	1947	2	3
B. Harrison	Caroline Lavinia Scott	1832, Ohio	1853	1892	1	1
	Mrs. Mary Scott Lord Dimmick	1858, Pa.	1896	1948	..	1
McKinley	Ida Saxton	1847, Ohio	1871	1907	..	2
T. Roosevelt	Alice Hathaway Lee	1861, Mass.	1880	1884	..	1
	Edith Kermit Carow	1861, Conn.	1886	1948	4	1
Taft	Helen Herron	1861, Ohio	1886	1943	2	1
Wilson	Ellen Louise Axson	1860, Ga.	1885	1914	..	3
	Mrs. Edith Bolling Galt	1872, Va.	1915	....	..	..
Harding	Mrs. Florence Kling DeWolfe	1860, Ohio	1891	1924	..	..
Coolidge	Grace Anna Goodhue	1879, Vt.	1905	1957	2	..
Hoover	Lou Henry	1875, Iowa	1899	1944	2	..
F. D. Roosevelt	Anna Eleanor Roosevelt	1884, N. Y.	1905	....	5	1
Truman	Bess Wallace	1885, Mo.	1919	....	..	1
Eisenhower	Mamie Geneva Doud	1896, Iowa	1916	....	2	..

* Includes children who died in infancy.

Annual Salaries of Federal Officials

Source: U. S. Department of the Treasury

President of the U. S.	\$100,000 ¹	Secretaries of the Army, Navy, Air Force.....	22,000
Vice President of the U. S.	35,000 ²	Senators and Representatives.....	22,500
Cabinet members.....	25,000	Speaker of the House.....	35,000 ²
Undersecretaries of executive departments.....	21,000 ³	Chief Justice of the Supreme Court.....	35,500
Deputy Secretary of Defense.....	22,500	Associate Justices of the Supreme Court.....	35,000

¹ Plus taxable \$50,000 for expenses and a nontaxable sum (not to exceed \$40,000 a year) for traveling and official entertainment expenses. ² Plus taxable \$10,000 for expenses. ³ Except Undersecretary of State, who receives \$22,500.
NOTE: All salaries shown above are taxable.

Footnotes for Table on Preceding Page

¹ F—Federalist; DR—Democratic-Republican; D—Democratic; W—Whig; R—Republican; U—Union. ² Same party as President, except as indicated. ³ No party for first election. The party system in the U. S. made its appearance during Washington's first term. ⁴ Democratic-Republican. ⁵ Died in office Apr. 20, 1812. ⁶ Died in office Nov. 23, 1814. ⁷ Resigned Dec. 28, 1832, to become U. S. Senator. ⁸ Died in office. ⁹ Died in office Apr. 18, 1853. ¹⁰ Died in office (shot Apr. 14 by John Wilkes Booth). ¹¹ Died in office Nov. 22, 1875. ¹² Died in office (shot July 2 by Charles J. Guiteau). ¹³ Died in office Nov. 25, 1885. ¹⁴ Died in office (shot Sept. 6 by Leon F. Czolgosz). ¹⁵ Died in office Nov. 21, 1890. ¹⁶ Died in office Oct. 30, 1912. ¹⁷ The Republican National Convention of 1864 adopted the name Union party. It renominated Lincoln for President; for Vice President it nominated Johnson, a War Democrat. Although frequently listed as a Republican Vice President and President, Johnson undoubtedly considered himself strictly a member of the Union party. When that party broke apart after 1868, he returned to the Democratic party. ¹⁸ Johnson was not a professed church member; however, he admired the Baptist principles of church government.

CONGRESS OF THE UNITED STATES

PARTY STRENGTH IN 81ST TO 85TH CONGRESSES

The Senate*

The House†

	81st 1949	82nd 1951	83rd 1953	84th 1955	85th 1957	81st 1949	82nd 1951	83rd 1953	84th 1955	85th† 1957
Democratic	54	49	47	48	49	263	235	213	232	234
Republican	42	47	48	47	47	171	199	221	203	200
Other	0	0	1	1	0	1	1	1	0	0

* 49 necessary for majority. † 218 necessary for majority. ‡ 1 seat vacant. NOTE: The year shown with each Congress is the one in which the 1st session was held. Party breakdown is according to the election held the preceding November.

THE EIGHTY-FIFTH CONGRESS

THE SENATE

The expiration date of each Senator's term is January of the year shown in parentheses. An asterisk (*) indicates that the Senator was re-elected in the 1956 elections to serve a full 6-year term ending in 1963.

ALABAMA

*Lister Hill, D (1963)
John J. Sparkman, D (1961)

ARIZONA

*Carl Hayden, D (1963)
Barry M. Goldwater, R (1959)

ARKANSAS

John L. McClellan, D (1961)
*J. W. Fulbright, D (1963)

CALIFORNIA

William F. Knowland, R (1959)
*Thomas H. Kuchel, R (1963)

COLORADO

Gordon Allott, R (1961)
John A. Carroll, D (1963)

CONNECTICUT

*Prescott S. Bush, R (1963)
William A. Purtell, R (1959)

DELAWARE

John J. Williams, R (1959)
J. Allen Frear, Jr., D (1961)

FLORIDA

Spessard L. Holland, D (1959)
*George A. Smathers, D (1963)

GEORGIA

Richard B. Russell, D (1961)
Herman E. Talmadge, D (1963)

IDAHO

Henry C. Dworshak, R (1961)
Frank Church, D (1963)

ILLINOIS

Paul H. Douglas, D (1961)
*Everett M. Dirksen, R (1963)

INDIANA

*Homer E. Capehart, R (1963)
William E. Jenner, R (1959)

IOWA

*Bourke B. Hickenlooper, R (1963)
Thomas E. Martin, R (1961)

KANSAS

Andrew F. Schoeppel, R (1961)
*Frank Carlson, R (1963)

KENTUCKY

John Sherman Cooper, R (1961)
Thruston B. Morton, R (1963)

LOUISIANA

Allen J. Ellender, Sr., D (1961)
*Russell B. Long, D (1963)

MAINE

Margaret Chase Smith, R (1961)
Frederick G. Payne, R (1959)

MARYLAND

*John M. Butler, R (1963)
J. Glenn Beall, R (1959)

MASSACHUSETTS

Leverett Saltonstall, R (1961)
John F. Kennedy, D (1959)

MICHIGAN

Charles E. Potter, R (1959)
Patrick V. McNamara, D (1961)

MINNESOTA

Edward J. Thye, R (1959)
Hubert H. Humphrey, D (1961)

MISSISSIPPI

James O. Eastland, D (1961)
John S. Stennis, D (1959)

MISSOURI

*Thomas C. Hennings, Jr., D (1963)
Stuart Symington, D (1959)

MONTANA

James E. Murray, D (1961)
Mike Mansfield, D (1959)

NEBRASKA

Roman L. Hruska, R (1959)
Carl T. Curtis, R (1961)

NEVADA

George W. Malone, R (1959)
*Alan Bible, D (1963)

NEW HAMPSHIRE

Styles Bridges, R (1961)
*Norris Cotton, R (1963)

NEW JERSEY

H. Alexander Smith, R (1959)
Clifford P. Case, R (1961)

NEW MEXICO

Dennis Chavez, D (1959)
Clinton P. Anderson, D (1961)

NEW YORK

Irving M. Ives, R (1959)
Jacob K. Javits, R (1963)

NORTH CAROLINA

*Sam J. Ervin, Jr., D (1963)
W. Kerr Scott, D (1961)

NORTH DAKOTA

William Langer, R (1959)
*Milton R. Young, R (1963)

OHIO

John W. Bricker, R (1959)
Frank J. Lausche, D (1963)

OKLAHOMA

Robert S. Kerr, D (1961)
*A. S. Mike Monroney, D (1963)

OREGON

*Wayne Morse, D (1963)
Richard L. Neuberger, D (1961)

PENNSYLVANIA

Edward Martin, R (1959)
Joseph Clark, Jr., D (1963)

RHODE ISLAND

Theodore F. Green, D (1961)
John O. Pastore, D (1959)

SOUTH CAROLINA

*Olin D. Johnston, D (1963)
Strom Thurmond, D (1961)

SOUTH DAKOTA

Karl E. Mundt, R (1961)
 *Francis Case, R (1963)

TENNESSEE

Estes Kefauver, D (1961)
 Albert Gore, D (1959)

TEXAS

Lyndon B. Johnson, D (1961)
 Ralph Yarborough, D (1959)

UTAH

Arthur V. Watkins, R (1959)
 *Wallace F. Bennett, R (1963)

VERMONT

*George D. Aiken, R (1963)
 Ralph E. Flanders, R (1959)

VIRGINIA

Harry Flood Byrd, D (1959)
 A. Willis Robertson, D (1961)

WASHINGTON

*Warren G. Magnuson, D
 (1963)

Henry M. Jackson, D (1959)

WEST VIRGINIA

Matthew M. Neely, D (1961)
 Chapman Revercomb, R (1959)

WISCONSIN

*Alexander Wiley, R (1963)
 William Proxmire, D (1959)

WYOMING

Frank A. Barrett, R (1959)
 Joseph O'Mahoney, D (1961)

CONGRESSIONAL COMMITTEES**Committees of the Senate****Agriculture and Forestry (15)**

Chairman: Allen J. Ellender, Sr. (La.)
Ranking Rep.: George D. Aiken (Vt.)

Appropriations (23)

Chairman: Carl Hayden (Ariz.)
Ranking Rep.: Styles Bridges (N. H.)

Armed Services (15)

Chairman: Richard B. Russell (Ga.)
Ranking Rep.: Leverett Saltonstall (Mass.)

Banking and Currency (15)

Chairman: J. W. Fulbright (Ark.)
Ranking Rep.: Homer E. Capehart (Ind.)

District of Columbia (9)

Chairman: Matthew M. Neely, (W. Va.)
Ranking Rep.: J. Glenn Beall (Md.)

Finance (15)

Chairman: Harry Flood Byrd (Va.)
Ranking Rep.: Edward Martin (Pa.)

Foreign Relations (15)

Chairman: Theodore F. Green (R. I.)
Ranking Rep.: Alexander Wiley (Wis.)

Government Operations (13)

Chairman: John L. McClellan (Ark.)
Ranking Rep.: Karl E. Mundt (S. Dak.)

Interior and Insular Affairs (15)

Chairman: James E. Murray (Mont.)
Ranking Rep.: George W. Malone (Nev.)

Interstate and Foreign Commerce (15)

Chairman: Warren G. Magnuson (Wash.)
Ranking Rep.: John W. Bricker (Ohio)

Judiciary (15)

Chairman: James O. Eastland (Miss.)
Ranking Rep.: Alexander Wiley (Wis.)

Labor and Public Welfare (13)

Chairman: Lister Hill (Ala.)
Ranking Rep.: H. Alexander Smith (N. J.)

Post Office and Civil Service (13)

Chairman: Olin D. Johnston (S. C.)
Ranking Rep.: Frank Carlson (Kans.)

Public Works (13)

Chairman: Dennis Chavez (N. Mex.)
Ranking Rep.: Edward Martin (Pa.)

Rules and Administration (9)

Chairman: Thomas C. Hennings, Jr. (Mo.)
Ranking Rep.: Carl T. Curtis (Nebr.)

Committees of the House**Agriculture (37)**

Chairman: Harold D. Cooley (N. C.)
Ranking Rep.: August H. Andresen (Minn.)

Appropriations (50)

Chairman: Clarence Cannon (Mo.)
Ranking Rep.: John Taber (N. Y.)

Armed Services (40)

Chairman: Carl Vinson (Ga.)
Ranking Rep.: Leslie C. Arends (Ill.)

Banking and Currency (30)

Chairman: Brent Spence (Ky.)
Ranking Rep.: Henry O. Talle (Iowa)

District of Columbia (25)

Chairman: John L. McMillan (S. C.)
Ranking Rep.: Sid Simpson (Ill.)

Education and Labor (30)

Chairman: Graham A. Barden (N. C.)
Ranking Rep.: S. K. McConnell, Jr. (Pa.)

Foreign Affairs (32)

Chairman: Thomas S. Gordon (Ill.)
Ranking Rep.: Robert B. Chipperfield (Ill.)

Government Operations (30)

Chairman: William L. Dawson (Ill.)
Ranking Rep.: Clare E. Hoffman (Mich.)

House Administration (25)

Chairman: Omar Burleson (Tex.)
Ranking Rep.: Karl M. LeCompte (Iowa)

Interior and Insular Affairs (34)

Chairman: Clair Engle (Calif.)
Ranking Rep.: A. L. Miller (Nebr.)

Interstate and Foreign Commerce (33)

Chairman: Oren Harris (Ark.)
Ranking Rep.: Charles A. Wolverton (N. J.)

Judiciary (32)

Chairman: Emanuel Celler (N. Y.)
Ranking Rep.: Kenneth B. Keating (N. Y.)

Merchant Marine and Fisheries (32)

Chairman: Herbert C. Bonner (N. C.)
Ranking Rep.: Thor C. Tollefson (Wash.)

Post Office and Civil Service (25)

Chairman: Tom Murray (Tenn.)
Ranking Rep.: Edward H. Rees (Kans.)

Public Works (34)

Chairman: Charles A. Buckley (N. Y.)
Ranking Rep.: J. Harry McGregor (Ohio)

Rules (12)

Chairman: Howard W. Smith (Va.)
Ranking Rep.: Leo E. Allen (Ill.)

Un-American Activities (9)

Chairman: Francis E. Walter (Pa.)
Ranking Rep.: Bernard W. Kearney (N. Y.)

Veterans' Affairs (22)

Chairman: Olin E. Teague (Tex.)
Ranking Rep.: Edith Nourse Rogers (Mass.)

Ways and Means (25)

Chairman: Jere Cooper (Tenn.)
Ranking Rep.: Daniel A. Reed (N. Y.)

THE HOUSE OF REPRESENTATIVES

The apportionment based on the Seventeenth Census (1950) distributes the 435 seats in the House among the states according to the method of equal proportions. By this method the per cent difference between the average number of Representatives per million people in any 2 states is made as small as possible. Also, the per cent difference between the average districts, i.e., the average number of persons per Representative, in any 2 states is made as small as possible. By equalizing the representation of all pairs of states, the method gives as nearly equal representation as possible to all states in proportion to their population.

The numerals indicate the Congressional Districts of the states, and the designation At-L means At-Large. An asterisk (*) indicates that the Congressman was returned to office in the 1956 elections. The terms of all Representatives end January, 1959.

ALABAMA

(9 Representatives)

1. *Frank W. Boykin, D
2. *George M. Grant, D
3. *George W. Andrews, D
4. *Kenneth A. Roberts, D
5. *Albert Rains, D
6. *Armistead I. Selden Jr., D
7. *Carl Elliott, D
8. *Robert E. Jones, D
9. *George Huddleston, Jr., D

ARIZONA

(2 Representatives)

1. *John J. Rhodes, R
2. *Stewart L. Udall, D

ARKANSAS

(6 Representatives)

1. *E. C. Gathings, D
2. *Wilbur D. Mills, D
3. *James W. Trimble, D
4. *Oren Harris, D
5. *Brooks Hays, D
6. *W. F. Norrell, D

CALIFORNIA

(30 Representatives)

1. *Hubert B. Scudder, R
2. *Clair Engle, D, R
3. *John E. Moss, D
4. *William S. Mailliard, R
5. *John F. Shelley, D, R
6. *John F. Baldwin, Jr., R
7. *John J. Allen, Jr., R
8. *George P. Miller, D
9. *J. Arthur Younger, R
10. *Charles S. Gubser, R
11. John J. McFall, D
12. *B. F. Sisk, D
13. *Charles M. Teague, R
14. *Harlan Hagen, D
15. *Gordon L. McDonough, R
16. *Donald L. Jackson, R
17. *Cecil R. King, D
18. *Craig Hosmer, R
19. *Chet Holifield, D
20. H. Allen Smith, R
21. *Edgar W. Hiestand, R
22. *Joe Holt, R
23. *Clyde Doyle, D
24. *Glenard P. Lipscomb, R
25. *Patrick J. Hillings, R
26. *James Roosevelt, D
27. *Harry R. Sheppard, D, R
28. *James B. Utt, R
29. D. S. (Judge) Saund, D
30. *Bob Wilson, R

COLORADO

(4 Representatives)

1. *Byron G. Rogers, D
2. *William S. Hill, R
3. *J. Edgar Chenoweth, R
4. *Wayne N. Aspinall, D

CONNECTICUT

(6 Representatives)

1. Edwin H. May, Jr., R
2. *Horace Seely-Brown, Jr., R
3. *Albert W. Cretella, R
4. *Albert P. Morano, R
5. *James T. Patterson, R
- At-L. *Antoni N. Sadiak, R

DELAWARE

(1 Representative)

- At-L. Harry G. Haskell, Jr., R

FLORIDA

(8 Representatives)

1. *William C. Cramer, R
2. *Charles E. Bennett, D
3. *Robert L. F. Sikes, D
4. *Dante B. Fascell, D
5. *A. Sydney Herlong Jr., D
6. *Paul G. Rogers, D
7. *James A. Haley, D
8. *D. R. (Billy) Matthews, D

GEORGIA

(10 Representatives)

1. *Prince H. Preston, D
2. *John L. Pilcher, D
3. *E. L. (Tic) Forrester, D
4. *John James Flynt, Jr., D
5. *James C. Davis, D
6. *Carl Vinson, D
7. *Henderson Lanham, D
8. *Mrs. Iris F. Blitch, D
9. *Phil M. Landrum, D
10. *Paul Brown, D

IDAHO

(2 Representatives)

1. *Mrs. Gracie Pfost, D
2. *Hamer H. Budge, R

ILLINOIS

(25 Representatives)

1. *William L. Dawson, D
2. *Barratt O'Hara, D
3. Emmet F. Byrne, R

4. *William E. McVey, R
5. *John C. Kluczynski, D
6. *Thomas J. O'Brien, D
7. (Vacant)
8. *Thomas S. Gordon, D
9. *Sidney R. Yates, D
10. Harold R. Collier, R
11. *Timothy P. Sheehan, R
12. *Charles A. Boyle, D
13. *Mrs. Marguerite Stitt Church, R
14. Russell W. Keeney, R
15. *Noah M. Mason, R
16. *Leo E. Allen, R
17. *Leslie C. Arends, R
18. Robert H. Michel, R
19. *Robert B. Chipfield, R
20. *Sid Simpson, R
21. *Peter F. Mack, Jr., D
22. *William L. Springer, R
23. *Charles W. Vursell, R
24. *Melvin Price, D
25. *Kenneth J. Gray, D

INDIANA

(11 Representatives)

1. *Ray J. Madden, D
2. *Charles A. Halleck, R
3. F. Jay Nimitz, R
4. *E. Ross Adair, R
5. *John V. Beamer, R
6. *Mrs. Cecil M. Harden, R
7. *William G. Bray, R
8. *Winfield K. Denton, D
9. *Earl Wilson, R
10. *Ralph Harvey, R
11. *Charles B. Brownson, R

IOWA

(8 Representatives)

1. *Fred Schwengel, R
2. *Henry O. Talle, R
3. *H. R. Gross, R
4. *Earl M. LeCompte, R
5. *Paul Cunningham, R
6. Merwin Coad, D
7. *Ben F. Jensen, R
8. *Charles B. Hoeven, R

KANSAS

(6 Representatives)

1. *William H. Avery, R
2. *Errett P. Scrivner, R
3. *Myron V. George, R
4. *Edward H. Rees, R
5. J. Floyd Breeding, D
6. *Wint Smith, R

KENTUCKY

(8 Representatives)

1. *Noble J. Gregory, D
2. *William H. Natcher, D
3. *John M. Robson, Jr., R
4. *Frank Chelf, D
5. *Brent Spence, D
6. *John C. Watts, D
7. *Carl D. Perkins, D
8. *Eugene Siler, R

LOUISIANA

(8 Representatives)

1. *F. Edward Hébert, D
2. *Hale Boggs, D
3. *Edwin E. Willis, D
4. *Overton Brooks, D
5. *Otto E. Passman, D
6. *James H. Morrison, D
7. *T. Ashton Thompson, D
8. *George S. Long, D

MAINE

(3 Representatives)

1. *Robert Hale, R
2. Frank M. Coffin, D
3. *Clifford G. McIntire, R

MARYLAND

(7 Representatives)

1. *Edward T. Miller, R
2. *James P. S. Devereux, R
3. *Edward A. Garmatz, D
4. *George H. Fallon, D
5. *Richard E. Lankford, D
6. *DeWitt S. Hyde, R
7. *Samuel N. Friedel, D

MASSACHUSETTS

(14 Representatives)

1. *John W. Heselton, R
2. *Edward P. Boland, D
3. *Phillip J. Philbin, D
4. *Harold D. Donohue, D
5. *Mrs. Edith Nourse Rogers, R
6. *William H. Bates, R
7. *Thomas J. Lane, D
8. *Thorbert H. Macdonald, D
9. *Donald W. Nicholson, R
10. *Laurence Curtis, R
11. *Thomas P. O'Neill, Jr., D
12. *John W. McCormack, D
13. *Richard B. Wigglesworth, R
14. *Joseph W. Martin, Jr., R

MICHIGAN

(18 Representatives)

1. *Thaddeus M. Machrowicz, D
2. *George Meader, R
3. *August E. Johansen, R
4. *Clare E. Hoffman, R
5. *Gerald R. Ford, Jr., R
6. Charles E. Chamberlain, R
7. Robert J. McIntosh, R
8. *Alvin M. Bentley, R
9. Robert P. Griffin, R
10. *Elford A. Cederberg, R

11. *Victor A. Knox, R
12. *John B. Bennett, R
13. *Charles C. Diggs, Jr., D
14. *Louis C. Rabaut, D
15. *John D. Dingell, D
16. *John Lesinski, D
17. *Mrs. Martha W. Griffiths, D
18. William S. Broomfield, R

MINNESOTA

(9 Representatives)

1. *August H. Andresen, R
2. *Joseph P. O'Hara, R
3. *Roy W. Wier, D
4. *Eugene J. McCarthy, D
5. *Walter H. Judd, R
6. *Fred Marshall, D
7. *H. Carl Andersen, R
8. *John A. Blatnik, D
9. *Mrs. Coya Knutson, D

MISSISSIPPI

(6 Representatives)

1. *Thomas G. Abernethy, D
2. *Jamie L. Whitten, D
3. *Frank E. Smith, D
4. *John Bell Williams, D
5. *Arthur Winstead, D
6. *William M. Colmer, D

MISSOURI

(11 Representatives)

1. *Frank M. Karsten, D
2. *Thomas B. Curtis, R
3. *Mrs. Leonor K. Sullivan, D
4. *George H. Christopher, D
5. *Richard Bolling, D
6. *W. R. Hull, Jr., D
7. Charles H. Brown, D
8. *A. S. J. Carnahan, D
9. *Clarence Cannon, D
10. *Paul C. Jones, D
11. *Morgan M. Moulder, D

MONTANA

(2 Representatives)

1. *Lee Metcalf, D
2. LeRoy H. Anderson, D

NEBRASKA

(4 Representatives)

1. *Phil Weaver, R
2. Glen Cunningham, R
3. *Robert D. Harrison, R
4. *A. L. Miller, R

NEVADA

(1 Representative)

- At-L. Walter S. Baring, D

NEW HAMPSHIRE

(2 Representatives)

1. *Chester E. Merrow, R
2. *Perkins Bass, R

NEW JERSEY

(14 Representatives)

1. *Charles A. Wolverton, R

2. (Vacant)

3. *James C. Auchincloss, R
4. *Frank Thompson, Jr., D
5. *Peter Frelinghuysen, Jr., R
6. Mrs. Florence P. Dwyer, R
7. *William B. Widnall, R
8. *Gordon Canfield, R
9. *Frank C. Osmer, Jr., R
10. *Peter W. Rodino, Jr., D
11. *Hugh J. Addonizio, D
12. *Robert W. Kean, R
13. *Alfred D. Sieminski, D
14. Vincent J. Dellay, R

NEW MEXICO

(2 Representatives)

- At-L. *John J. Dempsey, D
- At-L. Joseph M. Montoya, D

NEW YORK

(43 Representatives)

1. *Stuyvesant Wainwright, R
2. *Steven B. Derounian, R
3. *Frank J. Becker, R
4. *Henry J. Latham, R
5. *Albert H. Bosch, R
6. *Lester Holtzman, D, Lib.
7. *James J. Delaney, D, Lib.
8. *Victor L. Anfuso, D, Lib.
9. *Eugene J. Keogh, D, Lib.
10. *Mrs. Edna F. Kelly, D, Lib.
11. *Emanuel Celler, D, Lib.
12. *Francis E. Dorn, R
13. *Abraham J. Multer, D, Lib.
14. *John J. Rooney, D, Lib.
15. *John H. Ray, R
16. *Adam C. Powell, Jr., D
17. Frederic Coudert, Jr., R
18. Alfred E. Santangelo, D, Lib.
19. Leonard Farbstein, D, Lib.
20. Ludwig Teller, D, Lib.
21. *Herbert Zelenko, D, Lib.
22. *James C. Healey, D
23. *Isidore Dollinger, D
24. *Charles A. Buckley, D
25. *Paul A. Fino, R
26. Edwin B. Dooley, R
27. *Ralph W. Gwinn, R
28. *Mrs. Katharine St. George, R
29. *J. Ernest Wharton, R
30. *Leo W. O'Brien, D
31. *Dean P. Taylor, R
32. *Bernard W. Kearney, R
33. *Clarence E. Kilburn, R
34. *William R. Williams, R
35. *R. Walter Riehlman, R
36. *John Taber, R
37. *W. Sterling Cole, R
38. *Kenneth B. Keating, R
39. *Harold C. Ostertag, R
40. *William E. Miller, R
41. *Edmund P. Radwan, R
42. *John R. Pillion, R
43. *Daniel A. Reed, R

NORTH CAROLINA

(12 Representatives)

1. *Herbert C. Bonner, D
2. *L. H. Fountain, D
3. *Graham A. Barden, D
4. *Harold D. Cooley, D
5. Ralph J. Scott, D
6. *Carl T. Durham, D
7. Alton Lennon, D
8. A. Paul Kitchin, D
9. *Hugh Q. Alexander, D
10. *Charles R. Jonas, R
11. Basil L. Whitener, D
12. *George A. Shuford, D

NORTH DAKOTA

(2 Representatives)

- At-L. *Usher L. Burdick, R
At-L. *Otto Krueger, R

OHIO

(23 Representatives)

1. *Gordon H. Scherer, R
2. *William E. Hess, R
3. *Paul F. Schenck, R
4. *William M. McCulloch, R
5. *Cliff Clevenger, R
6. *James G. Polk, D
7. *Clarence J. Brown, R
8. *Jackson E. Betts, R
9. *Thomas L. Ashley, D
10. *Thomas A. Jenkins, R
11. David S. Dennison, Jr., R
12. *John M. Vorys, R
13. *A. D. Baumhart, Jr., R
14. *William H. Ayres, R
15. *John E. Henderson, R
16. *Frank T. Bow, R
17. *J. Harry McGregor, R
18. *Wayne L. Hays, D
19. *Michael J. Kirwan, D
20. *Michael A. Feighan, D
21. *Charles A. Vanik, D
22. *Mrs. Frances P. Bolton, R
23. *William E. Minshall, R

OKLAHOMA

(6 Representatives)

1. *Page Belcher, R
2. *Ed Edmondson, D
3. *Carl Albert, D
4. *Tom Steed, D
5. *John Jarman, D
6. Toby Morris, D

OREGON

(4 Representatives)

1. *Walter Norblad, R
2. Al Ullman, D
3. *Mrs. Edith Green, D
4. Charles O. Porter, D

PENNSYLVANIA

(30 Representatives)

1. *William A. Barrett, D
2. Mrs. Kathryn E. Granahan, D
3. *James A. Byrne, D
4. *Earl Chudoff, D
5. *William J. Green, Jr., D
6. *Hugh Scott, R
7. *Benjamin F. James, R
8. Willard S. Curtin, R

9. *Paul B. Dague, R
10. *Joseph L. Carrigg, R
11. *Daniel J. Flood, D
12. *Ivor D. Fenton, R
13. *Samuel K. McConnell, Jr., R
14. *George M. Rhodes, D
15. *Francis E. Walter, D
16. *Walter M. Mumma, R
17. *Alvin R. Bush, R
18. *Richard M. Simpson, R
19. S. Walter Stauffer, R
20. *James E. Van Zandt, R
21. *Augustine B. Kelley, D
22. *John P. Saylor, R
23. *Leon H. Gavin, R
24. *Carroll D. Kearns, R
25. *Frank M. Clark, D
26. *Thomas E. Morgan, D
27. *James G. Fulton, R
28. *Herman P. Eberharter, D
29. *Robert J. Corbett, R
30. *Elmer J. Holland, D

RHODE ISLAND

(2 Representatives)

1. *Aime J. Forand, D
2. *John E. Fogarty, D

SOUTH CAROLINA

(6 Representatives)

1. *L. Mendel Rivers, D
2. *John J. Riley, D
3. *W. J. Bryan Dorn, D
4. *Robert T. Ashmore, D
5. Robert W. Hemphill, D
6. *John L. McMillan, D

SOUTH DAKOTA

(2 Representatives)

1. George McGovern, D
2. *E. Y. Berry, R

TENNESSEE

(9 Representatives)

1. *B. Carroll Reece, R
2. *Howard H. Baker, R
3. *James B. Frazier, Jr., D
4. *Joe L. Evins, D
5. J. Carlton Loser, D
6. *Ross Bass, D
7. *Tom Murray, D
8. *Jere Cooper, D
9. *Clifford Davis, D

TEXAS

(22 Representatives)

1. *Wright Patman, D
2. *Jack B. Brooks, D
3. Lindsey Beckworth, D
4. *Sam Rayburn, D
5. *Bruce Alger, R
6. *Olin E. Teague, D
7. *John Dowdy, D
8. *Albert Thomas, D
9. *Clark W. Thompson, D
10. *Homer Thornberry, D
11. *W. R. Poage, D
12. *Jim Wright, D
13. *Frank Ikard, D
14. John Young, D
15. *Joe M. Kilgore, D
16. *J. T. Rutherford, D
17. *Omar Burleson, D

18. *Walter Rogers, D
19. *George H. Mahon, D
20. *Paul J. Kilday, D
21. *O. C. Fisher, D
- At-L. *Martin Dies, D

UTAH

(2 Representatives)

1. *Henry Aldous Dixon, R
2. *William A. Dawson, R

VERMONT

(1 Representative)

- At-L. *Winston L. Prouty, R

VIRGINIA

(10 Representatives)

1. *Edward J. Robeson, Jr., D
2. *Porter Hardy, Jr., D
3. *J. Vaughan Gary, D
4. *Watkins M. Abitt, D
5. *William M. Tuck, D
6. *Richard H. Poff, R
7. *Burr P. Harrison, D
8. *Howard W. Smith, D
9. *W. Pat Jennings, D
10. *Joel T. Broyhill, R

WASHINGTON

(7 Representatives)

1. *Thomas M. Pelly, R
2. *Jack Westland, R
3. *Russell V. Mack, R
4. *Hal Holmes, R
5. *Walt Horan, R
6. *Thor C. Tollefson, R
- At-L. *Don Magnuson, D

WEST VIRGINIA

(6 Representatives)

1. Arch A. Moore, Jr., R
2. *Harley O. Staggers, D
3. *Cleveland M. Bailey, D
4. Will E. Neal, R
5. *Mrs. Elizabeth Kee, D
6. *Robert C. Byrd, D

WISCONSIN

(10 Representatives)

1. *Lawrence H. Smith, R
2. Donald E. Tewes, R
3. *Gardner R. Withrow, R
4. *Clement J. Zablocki, D
5. *Henry S. Reuss, D
6. *William K. Van Pelt, R
7. *Melvin R. Laird, R
8. *John W. Byrnes, R
9. *Lester R. Johnson, D
10. *Alvin E. O'Konski, R

WYOMING

(1 Representative)

- At-L. *Keith Thomson, R

ALASKA†

(1 Delegate)

- *E. L. (Bob) Bartlett, D

HAWAII†

(1 Delegate)

- John A. Burns, D

PUERTO RICO†

(1 Resident Commissioner)

- *Antonio Fernós-Isern,
Pop. Dem.

†Does not have vote.

Executive Departments and Agencies

Source: U.S. Government Manual

(Unless otherwise indicated, addresses shown are in Washington, D.C.; officials listed are as of Sept. 1957.)

Executive Office of the President THE WHITE HOUSE OFFICE

1600 Pennsylvania Ave., NW.

The Assistant to the President: Sherman Adams.

The Deputy Assistant to the President: Wilton B. Persons.

Secretary to the President: Bernard M. Shanley.

Press Secretary to the President: James C. Hagerty.

Special Counsel to the President: Gerald D. Morgan.

Special Assistant to the President: Harold E. Stassen.*

*On White House payroll, but reports directly to Secy. of State.

Activities: Serves President in performance of activities incident to his office.

BUREAU OF THE BUDGET

Executive Office Bldg.

Established: June 10, 1921.

Director: Percival F. Brundage.

Activities: Assists President in preparing budget and formulating fiscal program; supervises administration of budget; coordinates advice on proposed legislation; plans improvements in statistical services; keeps President informed of progress of activities by government agencies so that Congressional appropriations are spent most economically.

NATIONAL SECURITY COUNCIL (NSC)

Executive Office Bldg.

Members: 5. *Established:* July 26, 1947.

Chairman: Dwight D. Eisenhower, President of the U. S.

Other members: Richard M. Nixon, Vice President of the U. S.; John Foster Dulles, Secretary of State; Neil H. McElroy, Secretary of Defense; Gordon Gray, Director of Office of Defense Mobilization.

Director of Central Intelligence Agency: Allen W. Dulles.

Chairman of Operations Coordinating Board: Christian A. Herter.

Activities: Assesses and appraises objectives, commitments and risks of U. S. in relation to our actual and potential military power in interests of national security. Central Intelligence Agency advises NSC on all intelligence matters. Operations Coordinating Board provides for integrated implementation of national security policies.

COUNCIL OF ECONOMIC ADVISERS (CEA)

Executive Office Bldg.

Members: 3. *Established:* Feb. 20, 1946.

Chairman: Raymond J. Saulnier.

Other members: Joseph S. Davis, Paul W. McCracken.

Activities: Assists President in preparation of economic reports to Congress; studies economic trends; appraises government activities on nation's economy; recommends economic policies.

OFFICE OF DEFENSE MOBILIZATION (ODM)

Executive Office Bldg.

Established: 1953.

Director: Gordon Gray.

Activities: Advises President on co-ordination of military, industrial and civilian mobilization.

Executive Departments

DEPARTMENT OF STATE

21st St. & Virginia Ave., NW.

Established: 1781 as Department of Foreign Affairs; reconstituted, 1789, following adoption of Constitution; name changed to Department of State Sept. 15, 1789.

Secretary: John Foster Dulles.

Under Secretary: Christian A. Herter.

Activities: Determines government policy in relation to international problems; formulates measures for promoting friendship with other countries; develops policies and programs for U. S. participation in U. N. and other international organizations; conducts correspondence with our representatives abroad and with accredited foreign representatives here.

DEPARTMENT OF THE TREASURY

15th St. & Pennsylvania Ave., NW.

Established: Sept. 2, 1789.

Secretary: Robert B. Anderson.

Under Secretary: Fred C. Scribner, Jr.

Activities: Manages national finances; grants warrants for money drawn from Treasury pursuant to legal appropriations; handles collection of revenue; keeps and renders public accounts; prepares plans for improvement of revenue and for support of public credit; reports annually to Congress on condition of public finances; controls coinage and printing of money; administers Coast Guard, Bureau of Narcotics and Secret Service.

DEPARTMENT OF DEFENSE

The Pentagon

Established: July 26, 1947, as National Military Establishment; name changed to Department of Defense on Aug. 10, 1949. Subordinate to Secretary of Defense are Secretaries of Army, Navy, Air Force.

Secretary: Neil H. McElroy.

Deputy Secretary: Donald A. Quarles.

Secretary of the Army: Wilber M. Brucker.

Secretary of the Navy: Thomas S. Gates, Jr.

Commandant, Marine Corps: Gen. Randolph McC. Pate.

Secretary of the Air Force: James H. Douglas.

*Joint Chiefs of Staff:** Gen. Nathan F. Twining, chairman; Gen. Maxwell D. Taylor, Army; Adm. Arleigh A. Burke, Navy; Gen. Thomas O. White, Air Force; Gen. Randolph McC. Pate, Marine Corps (on Marine Corps matters only).

Activities: Provides for security of U. S. by establishing integrated policies and procedures; co-ordinates and directs the activities of 3 separately administered military departments (Army, Navy, Air Force).

DEPARTMENT OF JUSTICE

Constitution Ave. & 10th St., NW.

Established: Office of Attorney General was created Sept. 24, 1789. Although he was one of original Cabinet members, he was not executive department head until June 22, 1870, when Department of Justice was established.

Attorney General: Herbert Brownell, Jr.

Deputy Attorney General: William P. Rogers.

Director of FBI: J. Edgar Hoover.

Activities: Provides means for enforcing Federal laws; investigates and detects violations; represents U. S. in legal matters generally and gives advice and opinions when requested by President or heads of executive departments; directs FBI, Bureau of Prisons, Immigration and Naturalization Service.

POST OFFICE DEPARTMENT

12th St. & Pennsylvania Ave., NW.

Established: Office of Postmaster General and temporary post office system created Sept. 22, 1789. Act of Feb. 20, 1792, made detailed provisions for Post Office Department. Postmaster General became Cabinet member in 1829. Department received executive status June 8, 1872.

Postmaster General: Arthur E. Summerfield.

Deputy Postmaster General: Maurice H. Stans.

Activities: Maintains Postal Service of U. S. and executes all laws relative to it; negotiates, subject to approval of President, postal treaties with foreign governments.

DEPARTMENT OF THE INTERIOR

C St. between 18th & 19th Sts., NW.

Established: Mar. 3, 1849.

Secretary: Fred A. Seaton.

Under Secretary: Hatfield Chilson.

Activities: Develops and conserves natural resources of U. S. and territories; supervises public business relating to such offices as Bureau of Land Management, Bureau of Reclamation, Geological Survey, Bureau of Indian Affairs, National Park Service, Bureau of Mines, Fish and Wildlife Service, Office of Territories, etc.

* Consisting of a chairman and the chiefs of each service.

DEPARTMENT OF AGRICULTURE

14th St. & Independence Ave., SW.

Established: May 15, 1862. Administered by Commissioner of Agriculture until Feb. 9, 1889, when it was made executive department and office of Secretary was created.

Secretary: Ezra Taft Benson.

Under Secretary: True D. Morse.

Activities: Conducts comprehensive research and educational program relating to agriculture; provides crop reports, commodity standards, meat inspection and other marketing services; administers national forests; aids in flood control; administers price-support and production-adjustment programs; makes loans to farmers.

DEPARTMENT OF COMMERCE

14th St. & Constitution Ave., NW.

Established: Department of Commerce and Labor was created Feb. 14, 1903. On Mar. 4, 1913, all labor activities were transferred out of Department of Commerce and Labor and it was renamed Department of Commerce.

Secretary: Sinclair Weeks.

Under Secretary: Walter Williams.

Activities: Fosters and develops foreign and domestic commerce of U. S.; maintains Bureau of the Census, Office of Business Economics, Civil Aeronautics Administration, Coast and Geodetic Survey, Maritime Administration, Patent Office, Bureau of Public Roads, National Bureau of Standards, Weather Bureau, etc.

DEPARTMENT OF LABOR

14th St. & Constitution Ave., NW.

Established: Bureau of Labor was created in 1884 under Department of the Interior; later became independent department without executive rank. Returned to bureau status in Department of Commerce and Labor, but on Mar. 4, 1913, became independent executive department under its present name.

Secretary: James P. Mitchell.

Under Secretary: James T. O'Connell.

Activities: Promotes welfare of wage earners of U. S., improving their working conditions and advancing their opportunities for profitable employment; directs collection and collation of statistics concerning labor conditions; promulgates and enforces certain maximum-hour, minimum-wage, child-labor, safety and health standards.

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

330 Independence Ave., SW.

Established: Apr. 11, 1953, replacing Federal Security Agency, which was created Apr. 25, 1939.

Secretary: Marion B. Folsom.

Under Secretary: John A. Perkins.

Activities: Supervises and co-ordinates various organizations within the department. Organizations are: Food and Drug Administration, Office of Education, Office of Vocational Rehabilitation, Public Health Service, St. Elizabeths Hospital, Social Security Administration; also following Federally supported corporations: American Printing House for the Blind, Gallaudet College and Howard University.

Independent Agencies

(Because of space limitations, only agencies of interest to the general public are listed here.)

Executive Department

ATOMIC ENERGY COMMISSION (AEC)

19th St. & Constitution Ave., NW.

Members: 5. **Established:** Aug. 1, 1946.

Chairman: Lewis L. Strauss.

Other members: John F. Floberg, Dr. W. F. Libby, John S. Graham, Harold S. Vance.

Activities: Promotes Federally conducted and private research and development; controls dissemination of information and production, ownership and use of fissionable materials.

CIVIL AERONAUTICS BOARD (CAB)

Dept. of Commerce Bldg.

Members: 5. **Established:** June 30, 1940.

Chairman: James R. Durfee.

Activities: Regulates economic aspects of U. S. air carrier operation; prescribes safety standards; investigates and analyzes aircraft accidents; assists in development of international air transportation.

FARM CREDIT ADMINISTRATION (FCA)

South Bldg., Dept. of Agriculture.

Established: July 17, 1916.

Chairman: C. H. Matthews.

Activities: Supervises and coordinates cooperative credit system for agriculture; provides long- and short-term credit to farmers and their cooperative marketing, purchasing and business service organizations.

FEDERAL CIVIL DEFENSE ADMINISTRATION (FCDA)

Battle Creek, Mich. (Washington office: 2000 Florida Ave., NW.)

Established: 1950.

Administrator: Leo A. Hoegh.

Activities: Prepares, plans and directs civil-defense plans and programs.

FEDERAL COMMUNICATIONS COMMISSION (FCC)

Post Office Dept. Bldg.

Members: 7. **Established:** 1934.

Chairman: John C. Doerfer.

Activities: Regulates interstate and foreign communications by wire and radio, including amateur radio and TV; regulates operator's licenses; classifies radio stations

and prescribes their services; enforces use of radio for safety purposes on U. S. ships.

FEDERAL MEDIATION AND CONCILIATION SERVICE (FMCS)

Department of Labor Bldg.

Established: 1947.

Director: Joseph F. Finnegan.

Activities: Assists in labor-management disputes in industries affecting interstate commerce to reach settlements by mediation or conciliation; promotes better relations between labor and management.

FEDERAL POWER COMMISSION (FPC)

General Accounting Office Bldg., 441 G St., NW.

Established: June 23, 1930.

Chairman: Jerome K. Kuykendall.

Activities: Licenses hydroelectric projects on U. S. Government lands or navigable waters; has jurisdiction over interstate commerce involving sale of electric energy and natural gas and companies engaged therein; handles transmission of electric energy and natural gas between U. S. and foreign countries.

FEDERAL RESERVE SYSTEM (FRS), BOARD OF GOVERNORS OF

20th St. & Constitution Ave., NW.

Members: 7. **Established:** Dec. 23, 1913.

Chairman: William McC. Martin, Jr.

Activities: Supervises Federal Reserve banks; influences credit conditions; regulates open-market operations; issues Federal Reserve notes.

FEDERAL TRADE COMMISSION (FTC)

6th St. & Pennsylvania Ave., NW.

Members: 5. **Established:** Sept. 26, 1914.

Chairman: John W. Gwynne.

Activities: Prevents unfair competition, deceptive practices, false advertising, price discrimination, monopolies.

HOUSING AND HOME FINANCE AGENCY (HHFA)

1626 K St., NW.

Established: July 27, 1947.

Administrator: Albert M. Cole.

Activities: Provides single agency responsible for principal housing programs and functions of Federal government; supervises and co-ordinates activities of Federal National Mortgage Association (FNMA), Federal Housing Administration (FHA), Public Housing Administration (PHA), Federal Flood Indemnity Administration; Voluntary Home Mortgage Credit Program, Urban Renewal Administration, and Community Facilities Administration.

INTERSTATE COMMERCE COMMISSION (ICC)

12th St. & Constitution Ave., NW.

Members: 11. **Established:** Feb. 4, 1887.

Chairman: Owen Clarke.

Activities: Regulates railroads, motor

carriers, water carriers and freight forwarders as to rates, through-routes, services and bills of lading; authorizes mergers or consolidations; authorizes issue of securities by carriers.

NATIONAL LABOR RELATIONS BOARD (NLRB)

3rd & C Sts., SW.

Members: 5. *Established:* July 5, 1935.

Chairman: Boyd Leedom.

Activities: Prevents unfair labor practices by employers or labor organizations; conducts secret ballots among employees to determine their choice of bargaining representatives.

SECURITIES AND EXCHANGE COMMISSION (SEC)

425 2nd St., NW.

Members: 5. *Established:* June 6, 1934.

Chairman: Edward M. Gadsby.

Activities: Registers and issues regulations for securities and exchanges; registers securities offered for public sale; penalizes violators of regulations subject to appeal to U. S. Court of Appeals.

SELECTIVE SERVICE SYSTEM (SSS)

451 Indiana Ave., NW.

Established: 1948.

Director: Lt. Gen. Lewis B. Hershey.

Activities: Handles registration, examination, classification and selection for induction into armed forces or other disposition of men required to register under Universal Training and Service Act.

SMALL BUSINESS ADMINISTRATION (SBA)

811 Vermont Ave., NW.

Established: July 30, 1953.

Administrator: Wendell B. Barnes.

Activities: Aids and assists the interests of small business firms to insure a fair share of total government contracts; makes loans to small firms and victims of flood and disaster.

TENNESSEE VALLEY AUTHORITY (TVA)

New Sprinkle Bldg., Knoxville, Tenn. (Wash. office: Woodward Bldg., 15th & H Sts., NW.)

Members: 3. *Established:* May 18, 1933.

Chairman: Herbert D. Vogel.

Other members: Arnold R. Jones, Raymond R. Paty.

Activities: Provides navigable channel and flood control of Tennessee River and some of its larger tributaries; disposes of surplus electric power; improves, increases and cheapens fertilizer production.

U. S. CIVIL SERVICE COMMISSION (CSC)

8th & F Sts., NW.

Members: 3. *Established:* Jan. 16, 1883.

Chairman: Harris Ellsworth.

Activities: Provides examinations to test fitness of applicants for positions in competitive service; provides personnel in response to requests from appointing officers; investigates applicants for national security purposes; classifies positions; maintains service records.

U. S. INFORMATION AGENCY (USIA)

1776 Pennsylvania Ave., NW.

Established: Aug. 1, 1953.

Director: Arthur Larson.

Activities: Directs information to foreign peoples, such as explanation and interpretation of policies of U. S. Government and delineation of U. S. life and culture.

U. S. TARIFF COMMISSION

8th & E Sts., NW.

Members: 6. *Established:* Sept. 8, 1916.

Chairman: Edgar B. Brossard.

Activities: Investigates customs laws, unfair competition and foreign and domestic manufacturing costs; advises the President on duty rates.

VETERANS' ADMINISTRATION (VA)

H St. & Vermont Ave., NW.

Established: July 21, 1930.

Administrator: H. V. Higley.

Activities: Administers laws authorizing benefits for veterans and for their dependents or beneficiaries. Included are hospitalization, pensions, insurance, loans, education, etc.

Legislative Department

GENERAL ACCOUNTING OFFICE (GAO)

441 G St., NW.

Established: June 10, 1921.

Comptroller General of the U. S.: Joseph Campbell.

Activities: Performs independent audits of government financial transactions to provide basis for settlement of accounts and to evaluate management of financial affairs by agencies; exercises power of disallowance based on Comptroller General's settlement of accounts and claims; issues reports to Congress on its findings.

LIBRARY OF CONGRESS

First St., SE, between East Capitol St. and Independence Ave.

Established: Apr. 24, 1800.

Librarian of Congress: L. Quincy Mumford.

Activities: Intended primarily for service of Congress, it has come to include entire governmental establishment and public at large. (For further description, consult index.)

U. S. Cabinet Members with Dates of Appointment

Although the Constitution made no provision for a President's advisory group, the heads of the three executive departments (State, Treasury and War) and the Attorney General were organized by Washington into such a group; and by about 1793, the name "Cabinet" was applied to it. With the exception of the Attorney General up to 1870 and the Postmaster General from 1829-72, Cabinet members have been heads of executive departments, although other government officials may be called to sit in whenever necessary.

A Cabinet member is appointed by the President, subject to the confirmation of the Senate; and as his term is not fixed, he may be replaced at any time by the

President. At a change in Administration, it is customary for him to tender his resignation, but he remains in office until a successor is appointed.

The table of Cabinet members lists only those members who actually served after being duly commissioned. It does not include ad-interim appointments or cases where the appointee declined the office after appointment.

The dates shown are those of appointment. "Contd" indicates that the term continued from the previous Administration for a substantial amount of time. Those cases where the term continued for only a few days, until a new appointment could be made, are not indicated.

WASHINGTON		Attorney General		Secretary of the Navy		Secretary of the Navy	
Secretary of State		Levi Lincoln.....	1801	B. W. Crowninshield... Contd	1829	John Branch.....	1829
Thomas Jefferson.....	1789	Robert Smith.....	1805	Smith Thompson.....	1818	Levi Woodbury.....	1831
Edmund Randolph.....	1794	John Breckinridge....	1805	Samuel L. Southard... 1823		Mahlon Dickerson....	1834
Timothy Pickering....	1795	Caesar A. Rodney.....	1807				
Secretary of the Treasury		Secretary of the Navy		J. Q. ADAMS		VAN BUREN	
Alexander Hamilton....	1789	Benjamin Stoddert... Contd		Secretary of State		Secretary of State	
Oliver Wolcott, Jr.....	1795	Robert Smith.....	1801	Henry Clay.....	1825	John Forsyth.....	Contd
Secretary of War		MADISON		Secretary of the Treasury		Secretary of the Treasury	
Henry Knox.....	1789	Secretary of State		Richard Rush.....	1825	Levi Woodbury.....	Contd
Timothy Pickering.....	1795	Robert Smith.....	1809	Secretary of War		Secretary of War	
James McHenry.....	1796	James Monroe.....	1811	James Barbour.....	1825	Joel R. Poinsett.....	1837
Attorney General		Secretary of the Treasury		Peter B. Porter.....	1828	Attorney General	
Edmund Randolph.....	1789	Albert Gallatin.....	Contd	Attorney General		Attorney General	
William Bradford.....	1794	George W. Campbell... 1814		William Wirt.....	Contd	Benjamin F. Butler... Contd	
Charles Lee.....	1795	Alexander J. Dallas... 1814		Secretary of the Navy		Felix Grundy.....	1838
J. ADAMS		William H. Crawford... 1816		Samuel L. Southard.. Contd		Henry D. Gilpin.....	1840
Secretary of State		Secretary of War		JACKSON		Postmaster General	
Timothy Pickering.... Contd		William Eustis.....	1809	Secretary of State		Amos Kendall.....	Contd
John Marshall.....	1800	John Armstrong.....	1813	Martin Van Buren.... 1829		John M. Niles.....	1840
Secretary of the Treasury		James Monroe.....	1814	Edward Livingston... 1831		Secretary of the Navy	
Oliver Wolcott, Jr..... Contd		William H. Crawford... 1815		Louis McLane.....	1833	Mahlon Dickerson... Contd	
Samuel Dexter.....	1801	Attorney General		John Forsyth.....	1834	James K. Paulding....	1838
Secretary of War		Caesar A. Rodney... Contd		Secretary of the Treasury		W. HARRISON	
James McHenry..... Contd		William Pinckney..... 1811		Samuel D. Ingham.... 1829		Secretary of State	
Samuel Dexter.....	1800	Richard Rush.....	1814	Louis McLane.....	1831	Daniel Webster.....	1841
Attorney General		Secretary of the Navy		William J. Duane.... 1833		Secretary of the Treasury	
Charles Lee..... Contd		Paul Hamilton.....	1809	Roger B. Taney..... 1833		Thomas Ewing.....	1841
Secretary of the Navy		William Jones.....	1813	Levi Woodbury..... 1834		Secretary of War	
Benjamin Stoddert... 1798		B. W. Crowninshield.. 1814		Secretary of War		Attorney General	
JEFFERSON		MONROE		John H. Eaton..... 1829		John J. Crittenden....	1841
Secretary of State		Secretary of State		Lewis Cass.....	1831	Postmaster General	
James Madison.....	1801	John Quincy Adams... 1817		Attorney General		Francis Granger.....	1841
Secretary of the Treasury		Secretary of the Treasury		John M. Berrien..... 1829		Secretary of the Navy	
Samuel Dexter..... Contd		William H. Crawford.. Contd		Roger B. Taney..... 1831		George E. Badger.....	1841
Albert Gallatin.....	1801	Secretary of War		Benjamin F. Butler... 1833			
Secretary of War		John C. Calhoun.....	1817	Postmaster General ¹			
Henry Dearborn.....	1801	Attorney General		William T. Barry..... 1829			
		Richard Rush.....	Contd	Amos Kendall.....	1835		
		William Wirt.....	1817				

TYLER

Secretary of State

Daniel Webster..... Contd
Abel P. Upshur..... 1843
John C. Calhoun..... 1844

Secretary of the Treasury

Thomas Ewing..... Contd
Walter Forward..... 1841
John C. Spencer..... 1843
George M. Bibb..... 1844

Secretary of War

John Bell..... Contd
John C. Spencer..... 1841
James M. Porter..... 1843
William Wilkins..... 1844

Attorney General

John J. Crittenden..... Contd
Hugh S. Legaré..... 1841
John Nelson..... 1843

Postmaster General

Francis Granger..... Contd
Charles A. Wickliffe..... 1841

Secretary of the Navy

George E. Badger..... Contd
Abel P. Upshur..... 1841
David Henshaw..... 1843
Thomas W. Gilmer..... 1844
John Y. Mason..... 1844

POLK

Secretary of State

James Buchanan..... 1845

Secretary of the Treasury

Robert J. Walker..... 1845

Secretary of War

William L. Marcy..... 1845

Attorney General

John Y. Mason..... 1845
Nathan Clifford..... 1846
Isaac Toucey..... 1848

Postmaster General

Cave Johnson..... 1845

Secretary of the Navy

George Bancroft..... 1845
John Y. Mason..... 1846

TAYLOR

Secretary of State

John M. Clayton..... 1849

Secretary of the Treasury

William M. Meredith..... 1849

Secretary of War

George W. Crawford..... 1849

Attorney General

Reverdy Johnson..... 1849

Postmaster General

Jacob Collamer..... 1849

Secretary of the Navy

William B. Preston..... 1849

Secretary of the Interior

Thomas Ewing..... 1849

FILLMORE

Secretary of State

Daniel Webster..... 1850
Edward Everett..... 1852

Secretary of the Treasury

Thomas Corwin..... 1850

Secretary of War

Charles M. Conrad..... 1850

Attorney General

John J. Crittenden..... 1850

Postmaster General

Nathan K. Hall..... 1850
Samuel D. Hubbard..... 1852

Secretary of the Navy

William A. Graham..... 1850
John P. Kennedy..... 1852

Secretary of the Interior

Thos. M. T. McKennan..... 1850
Alex. H. H. Stuart..... 1850

PIERCE

Secretary of State

William L. Marcy..... 1853

Secretary of the Treasury

James Guthrie..... 1853

Secretary of War

Jefferson Davis..... 1853

Attorney General

Caleb Cushing..... 1853

Postmaster General

James Campbell..... 1853

Secretary of the Navy

James C. Dobbin..... 1853

Secretary of the Interior

Robert McClelland..... 1853

BUCHANAN

Secretary of State

Lewis Cass..... 1857
Jeremiah S. Black..... 1860

Secretary of the Treasury

Howell Cobb..... 1857
Philip F. Thomas..... 1860
John A. Dix..... 1861

Secretary of War

John B. Floyd..... 1857
Joseph Holt..... 1861

Attorney General

Jeremiah S. Black..... 1857
Edwin M. Stanton..... 1860

Postmaster General

Aaron V. Brown..... 1857
Joseph Holt..... 1859
Horatio King..... 1861

Secretary of the Navy

Isaac Toucey..... 1857

Secretary of the Interior

Jacob Thompson..... 1857

LINCOLN

Secretary of State

William H. Seward..... 1861

Secretary of the Treasury

Salmon P. Chase..... 1861
William P. Fessenden..... 1864
Hugh McCulloch..... 1865

Secretary of War

Simon Cameron..... 1861
Edwin M. Stanton..... 1862

Attorney General

Edward Bates..... 1861
James Speed..... 1864

Postmaster General

Montgomery Blair..... 1861
William Dennison..... 1864

Secretary of the Navy

Gideon Welles..... 1861

Secretary of the Interior

Caleb B. Smith..... 1861
John P. Usher..... 1863

JOHNSON

Secretary of State

William H. Seward..... Contd

Secretary of the Treasury

Hugh McCulloch..... Contd

Secretary of War

Edwin M. Stanton..... Contd
John M. Schofield..... 1868

Attorney General

James Speed..... Contd
Henry Stanbery..... 1866
William M. Evarts..... 1868

Postmaster General

William Dennison..... Contd
Alexander W. Randall..... 1866

Secretary of the Navy

Gideon Welles..... Contd

Secretary of the Interior

John P. Usher..... Contd
James Harlan..... 1865
Orville H. Browning..... 1866

GRANT

Secretary of State

Elihu B. Washburne..... 1869
Hamilton Fish..... 1869

Secretary of the Treasury

George S. Boutwell..... 1869
William A. Richardson..... 1873
Benjamin H. Bristow..... 1874
Lot M. Morrill..... 1876

Secretary of War

John A. Rawlins..... 1869
William T. Sherman..... 1869
William W. Belknap..... 1869
Alphonso Taft..... 1876
James D. Cameron..... 1876

Attorney General

Ebenezer R. Hoar..... 1869
Amos T. Akerman..... 1870
George H. Williams..... 1871
Edwards Pierrepont..... 1875
Alphonso Taft..... 1876

Postmaster General

John A. J. Creswell..... 1869
James W. Marshall..... 1874
Marshall Jewell..... 1874
James N. Tyner..... 1876

Secretary of the Navy

Adolph E. Borie..... 1869
George M. Robeson..... 1869

Secretary of the Interior

Jacob D. Cox..... 1869
Columbus Delano..... 1870
Zachariah Chandler..... 1875

HAYES

Secretary of State

William M. Evarts..... 1877

Secretary of the Treasury

John Sherman..... 1877

Secretary of War

George W. McCrary..... 1877
Alexander Ramsey..... 1879

Attorney General

Charles Devens..... 1877

Postmaster General

David M. Key..... 1877
Horace Maynard..... 1880

Secretary of the Navy

Richard W. Thompson..... 1877
Nathan Goff, Jr..... 1881

Secretary of the Interior

Carl Schurz..... 1877

GARFIELD

Secretary of State

James G. Blaine..... 1881

Secretary of the Treasury

William Windom..... 1881

Secretary of War

Robert T. Lincoln..... 1881

Attorney General

Wayne MacVeagh..... 1881

Postmaster General

Thomas L. James..... 1881

Secretary of the Navy

William H. Hunt..... 1881

Secretary of the Interior

Samuel J. Kirkwood..... 1881

ARTHUR

Secretary of State

James G. Blaine..... Contd
F. T. Frelinghuysen..... 1881

Secretary of the Treasury

William Windom..... Contd
Charles J. Folger..... 1881
Walter Q. Gresham..... 1884
Hugh McCulloch..... 1884

Secretary of War

Robert T. Lincoln..... Contd

Attorney General

Wayne MacVeagh..... Contd
Benjamin H. Brewster..... 1881

Postmaster General

Thomas L. James..... Contd
Timothy O. Howe..... 1881
Walter Q. Gresham..... 1883
Frank Hatton..... 1884

Secretary of the Navy

William H. Hunt..... Contd
William E. Chandler..... 1882

Secretary of the Interior

Samuel J. Kirkwood..... Contd
Henry M. Teller..... 1882

CLEVELAND

Secretary of State

Thomas F. Bayard..... 1885

Secretary of the Treasury

Daniel Manning..... 1885
Charles S. Fairchild..... 1887

Secretary of War

William C. Endicott..... 1885

Attorney General

Augustus H. Garland..... 1885

Postmaster General

William F. Vilas..... 1885
Don M. Dickinson..... 1888

Secretary of the Navy

William C. Whitney..... 1885

Secretary of the Interior

Lucius Q. C. Lamar..... 1885
William F. Vilas..... 1888

Secretary of Agriculture

Norman J. Colman..... 1889

HARRISON

Secretary of State

James G. Blaine..... 1889
John W. Foster..... 1892

Secretary of the Treasury

William Windom..... 1889
Charles Foster..... 1891

Secretary of War

Redfield Proctor..... 1889
Stephen B. Elkins..... 1891

Attorney General

William H. H. Miller..... 1889

Postmaster General

John Wanamaker..... 1889

Secretary of the Navy

Benjamin F. Tracy..... 1889

Secretary of the Interior

John W. Noble..... 1889

Secretary of Agriculture

Jeremiah M. Rusk..... 1889

CLEVELAND

Secretary of State

Walter Q. Gresham..... 1893
Richard Olney..... 1895

Secretary of the Treasury

John G. Carlisle..... 1893

Secretary of War

Daniel S. Lamont..... 1893

Attorney General

Richard Olney..... 1893
Judson Harmon..... 1895

Postmaster General

Wilson S. Bissell..... 1893
William L. Wilson..... 1895

Secretary of the Navy

Hilary A. Herbert..... 1893

Secretary of the Interior

Hoke Smith..... 1893
David R. Francis..... 1896

Secretary of Agriculture

Julius Sterling Morton..... 1893

McKINLEY

Secretary of State

John Sherman..... 1897
William R. Day..... 1898
John Hay..... 1898

Secretary of the Treasury

Lyman J. Gage..... 1897

Secretary of War

Russell A. Alger..... 1897
Elihu Root..... 1899

Attorney General

Joseph McKenna..... 1897
John W. Griggs..... 1898
Philander C. Knox..... 1901

Postmaster General

James A. Gary..... 1897
Charles E. Smith..... 1898

Secretary of the Navy

John D. Long..... 1897

Secretary of the Interior

Cornelius N. Bliss..... 1897
Ethan A. Hitchcock..... 1898

Secretary of Agriculture

James Wilson..... 1897

T. ROOSEVELT

Secretary of State

John Hay..... Contd
Elihu Root..... 1905
Robert Bacon..... 1909

Secretary of the Treasury

Lyman J. Gage..... Contd
Leslie M. Shaw..... 1902
George B. Cortelyou..... 1907

Secretary of War

Elihu Root..... Contd
William H. Taft..... 1904
Luke E. Wright..... 1908

Attorney General

Philander C. Knox..... Contd
William H. Moody..... 1904
Charles J. Bonaparte..... 1906

Postmaster General

Charles E. Smith..... Contd
Henry C. Payne..... 1902
Robert J. Wynne..... 1904
George B. Cortelyou..... 1905
George von L. Meyer..... 1907

Secretary of the Navy

John D. Long..... Contd
William H. Moody..... 1902
Paul Morton..... 1904
Charles J. Bonaparte..... 1905
Victor H. Metcalf..... 1906
Truman H. Newberry..... 1908

Secretary of the Interior

Ethan A. Hitchcock..... Contd
James R. Garfield..... 1907

Secretary of Agriculture

James Wilson..... Contd

Secretary of Commerce
and Labor

George B. Cortelyou..... 1903
Victor H. Metcalf..... 1904
Oscar S. Straus..... 1906

TAFT

Secretary of State

Philander C. Knox..... 1909

Secretary of the Treasury

Franklin MacVeagh..... 1909

Secretary of War

Jacob M. Dickinson..... 1909
Henry L. Stimson..... 1911

Attorney General

George W. Wickersham..... 1909

Postmaster General

Frank H. Hitchcock..... 1909

Secretary of the Navy

George von L. Meyer..... 1909

Secretary of the Interior

Richard A. Ballinger..... 1909
Walter L. Fisher..... 1911

Secretary of Agriculture

James Wilson..... Contd

Secretary of Commerce
and Labor

Charles Nagel..... 1909

WILSON

Secretary of State

William J. Bryan..... 1913
Robert Lansing..... 1915
Bainbridge Colby..... 1920

Secretary of the Treasury

William G. McAdoo..... 1913
Carter Glass..... 1918
David F. Houston..... 1920

Secretary of War

Lindley M. Garrison..... 1913
Newton D. Baker..... 1916

Attorney General

James C. McReynolds..... 1913
Thomas W. Gregory..... 1914
A. Mitchell Palmer..... 1919

Postmaster General

Albert S. Burleson..... 1913

Secretary of the Navy

Josephus Daniels..... 1913

Secretary of the Interior

Franklin K. Lane..... 1913
John B. Payne..... 1920

Secretary of Agriculture

David F. Houston..... 1913
Edwin T. Meredith..... 1920

Secretary of Commerce

William C. Redfield..... 1913
Joshua W. Alexander..... 1919

Secretary of Labor

William B. Wilson..... 1913

HARDING

Secretary of State

Charles E. Hughes..... 1921

Secretary of the Treasury

Andrew W. Mellon..... 1921

Secretary of War

John W. Weeks..... 1921

Attorney General

Harry M. Daugherty..... 1921

Postmaster General

Will H. Hays..... 1921
Hubert Work..... 1922
Harry S. New..... 1923

Secretary of the Navy

Edwin Denby..... 1921

Secretary of the Interior

Albert B. Fall..... 1921
Hubert Work..... 1923

Secretary of Agriculture

Henry C. Wallace..... 1921

Secretary of Commerce

Herbert Hoover..... 1921

Secretary of Labor

James J. Davis..... 1921

COOLIDGE

Secretary of State
Charles E. Hughes..... Contd
Frank B. Kellogg..... 1925

Secretary of the Treasury
Andrew W. Mellon..... Contd

Secretary of War
John W. Weeks..... Contd
Dwight F. Davis..... 1925

Attorney General
Harry M. Daugherty..... Contd
Harlan F. Stone..... 1924
John G. Sargent..... 1925

Postmaster General
Harry S. New..... Contd

Secretary of the Navy
Edwin Denby..... Contd
Curtis D. Wilbur..... 1924

Secretary of the Interior
Hubert Work..... Contd
Roy O. West..... 1928

Secretary of Agriculture
Henry C. Wallace..... Contd
Howard M. Gore..... 1924
William M. Jardine..... 1925

Secretary of Commerce
Herbert Hoover..... Contd
William F. Whiting..... 1928

Secretary of Labor
James J. Davis..... Contd

HOOVER

Secretary of State
Frank B. Kellogg..... Contd
Henry L. Stimson..... 1929

Secretary of the Treasury
Andrew W. Mellon..... Contd
Ogden L. Mills..... 1932

Secretary of War
James W. Good..... 1929
Patrick J. Hurley..... 1929

¹ The Postmaster General did not become a Cabinet member until 1829. Earlier Postmasters General were: Samuel Osgood (1789), Timothy Pickering (1791), Joseph Habersham (1795), Gideon Granger (1801), Return J. Meigs, Jr. (1814) and John McLean (1823). ² On July 26, 1947, the Departments of War and of the Navy were incorporated into the Department of Defense.

Attorney General

William D. Mitchell..... 1929

Postmaster General

Walter F. Brown..... 1929

Secretary of the Navy

Charles F. Adams..... 1929

Secretary of the Interior

Ray Lyman Wilbur..... 1929

Secretary of Agriculture

Arthur M. Hyde..... 1929

Secretary of Commerce

Robert P. Lamont..... 1929

Roy D. Chapin..... 1932

Secretary of Labor

James J. Davis..... Contd

William N. Doak..... 1930

F. ROOSEVELT**Secretary of State**

Cordell Hull..... 1933

E. R. Stettinius, Jr..... 1944

Secretary of the Treasury

William H. Woodin..... 1933

Henry Morgenthau, Jr..... 1934

Secretary of War

George H. Dern..... 1933

Harry H. Woodring..... 1936

Henry L. Stimson..... 1940

Attorney General

Homer S. Cummings..... 1933

Frank Murphy..... 1939

Robert H. Jackson..... 1940

Francis Biddle..... 1941

Postmaster General

James A. Farley..... 1933

Frank C. Walker..... 1940

Secretary of the Navy

Claude A. Swanson..... 1933

Charles Edison..... 1940

Frank Knox..... 1940

James Forrestal..... 1944

Secretary of the Interior

Harold L. Ickes..... 1933

Secretary of Agriculture

Henry A. Wallace..... 1933

Claude R. Wickard..... 1940

Secretary of Commerce

Daniel C. Roper..... 1933

Harry L. Hopkins..... 1938

Jesse H. Jones..... 1940

Henry A. Wallace..... 1945

Secretary of Labor

Frances Perkins..... 1933

TRUMAN**Secretary of State**

E. R. Stettinius, Jr..... Contd

James F. Byrnes..... 1945

George C. Marshall..... 1947

Dean Acheson..... 1949

Secretary of the Treasury

Henry Morgenthau, Jr. Contd

Fred M. Vinson..... 1945

John W. Snyder..... 1946

Secretary of Defense

James Forrestal..... 1947

Louis A. Johnson..... 1949

George C. Marshall..... 1950

Robert A. Lovett..... 1951

Attorney General

Francis Biddle..... Contd

Tom C. Clark..... 1945

J. Howard McGrath..... 1949

James P. McGranery..... 1952

Postmaster General

Frank C. Walker..... Contd

Robert E. Hannegan..... 1945

Jesse M. Donaldson..... 1947

Secretary of the Interior

Harold L. Ickes..... Contd

Julius C. Krug..... 1946

Oscar L. Chapman..... 1949

Secretary of Agriculture

Claude R. Wickard..... Contd

Clinton P. Anderson..... 1945

Charles F. Brannan..... 1948

Secretary of Commerce

Henry A. Wallace..... Contd

W. Averell Harriman..... 1946

Charles Sawyer..... 1948

Secretary of Labor

Frances Perkins..... Contd

Lewis B. Schwellenbach..... 1945

Maurice J. Tobin..... 1948

Secretary of War²

Henry L. Stimson..... Contd

Robert P. Patterson..... 1945

Kenneth C. Royall..... 1947

Secretary of the Navy²

James Forrestal..... Contd

EISENHOWER**Secretary of State**

John Foster Dulles..... 1953

Secretary of the Treasury

George M. Humphrey..... 1953

Robert B. Anderson..... 1957

Secretary of Defense

Charles E. Wilson..... 1953

Neil H. McElroy..... 1957

Attorney General

Herbert Brownell, Jr..... 1953

Postmaster General

Arthur Summerfield..... 1953

Secretary of the Interior

Douglas McKay..... 1953

Frederick A. Seaton..... 1956

Secretary of Agriculture

Ezra Taft Benson..... 1953

Secretary of Commerce

Sinclair Weeks..... 1953

Secretary of Labor

Martin P. Durkin..... 1953

James P. Mitchell..... 1953

**Secretary of Health,
Education and Welfare**

Oveta Culp Hobby..... 1953

Marion B. Folsom..... 1955

The Confederate States of America, 1861-65

President—Jefferson Davis; born, Christian (now Todd) Co., Ky., June 3, 1808; died, Dec. 6, 1889. **Vice President**—Alexander H. Stephens.

CABINET*

Secretary of State
Robert Toombs..... 1861
Robert M. T. Hunter..... 1861
Judah P. Benjamin..... 1862

Secretary of Treasury
Christopher Memminger..... 1861
George A. Trenholm..... 1864

Secretary of War
Leroy P. Walker..... 1861
Judah P. Benjamin..... 1861
George W. Randolph..... 1862

James A. Seddon..... 1862
John C. Breckinridge..... 1865

Secretary of Navy
Stephen R. Mallory..... 1861

Postmaster General
Henry T. Ellett..... 1861
John H. Reagan..... 1861

Attorney General
Judah P. Benjamin..... 1861
Thomas Bragg..... 1861
Thomas N. Watts..... 1862
George Davis..... 1864

* Dates are those of appointment.

SPEAKERS OF THE HOUSE OF REPRESENTATIVES

Source: Congressional Directory.

Name and state	Congress	Dates served	Name and state	Congress	Dates served
Frederick A. C. Muhlenberg (Pa.)	1	1789-1791	Galusha A. Grow (Pa.)	37	1861-1863
Jonathan Trumbull (Conn.)	2	1791-1793	Schuyler Colfax (Ind.)	38-40	1863-1869
Frederick A. C. Muhlenberg (Pa.)	3	1793-1795	Theodore M. Pomeroy (N. Y.) ⁵	40	1869-1869
Jonathan Dayton (N. J.) ¹	4-5	1795-1799	James G. Blaine (Maine)	41-43	1869-1875
Theodore Sedgwick (Mass.)	6	1799-1801	Michael C. Kerr (Ind.) ⁶	44	1875-1876
Nathaniel Macon (N. C.)	7-9	1801-1807	Samuel J. Randall (Pa.)	44-46	1876-1881
Joseph B. Varnum (Mass.)	10-11	1807-1811	J. Warren Keifer (Ohio)	47	1881-1883
Henry Clay (Ky.) ²	12-13	1811-1814	John G. Carlisle (Ky.)	48-50	1883-1889
Langdon Cheves (S. C.)	13	1814-1815	Thomas B. Reed (Maine)	51	1889-1891
Henry Clay (Ky.) ³	14-16	1815-1820	Charles F. Crisp (Ga.)	52-53	1891-1895
John W. Taylor (N. Y.)	16	1820-1821	Thomas B. Reed (Maine)	54-55	1895-1899
Philip P. Barbour (Va.)	17	1821-1823	David B. Henderson (Iowa)	56-57	1899-1903
Henry Clay (Ky.)	18	1823-1825	Joseph G. Cannon (Ill.)	58-61	1903-1911
John W. Taylor (N. Y.)	19	1825-1827	Champ Clark (Mo.)	62-65	1911-1919
Andrew Stevenson (Va.) ⁴	20-23	1827-1834	Frederick H. Gillett (Mass.)	66-68	1919-1925
John Bell (Tenn.)	23	1834-1835	Nicholas Longworth (Ohio)	69-71	1925-1931
James K. Polk (Tenn.)	24-25	1835-1839	John N. Garner (Tex.)	72	1931-1933
Robert M. T. Hunter (Va.)	26	1839-1841	Henry T. Rainey (Ill.) ⁷	73	1933-1934
John White (Ky.)	27	1841-1843	Joseph W. Byrns (Tenn.) ⁸	74	1935-1936
John W. Jones (Va.)	28	1843-1845	William B. Bankhead (Ala.) ⁹	74-76	1936-1940
John W. Davis (Ind.)	29	1845-1847	Sam Rayburn (Tex.)	76-79	1940-1947
Robert C. Winthrop (Mass.)	30	1847-1849	Joseph W. Martin, Jr. (Mass.)	80	1947-1949
Howell Cobb (Ga.)	31	1849-1851	Sam Rayburn (Tex.)	81-82	1949-1953
Linn Boyd (Ky.)	32-33	1851-1855	Joseph W. Martin, Jr. (Mass.)	83	1953-1955
Nathaniel P. Banks (Mass.)	34	1855-1857	Sam Rayburn (Tex.)	84-85	1955-
James L. Orr (S. C.)	35	1857-1859			
Wm. Pennington (N. J.)	36	1859-1861			

¹ George Dent (Md.) was elected Speaker pro tempore for Apr. 20 and May 28, 1798. ² Resigned during 2d session of 13th Congress. ³ Resigned between 1st and 2d sessions of 16th Congress. ⁴ Resigned during 1st session of 23d Congress. ⁵ Elected Speaker and served the day of adjournment. ⁶ Died between 1st and 2d sessions of 44th Congress. During 1st session, there were two Speakers pro tempore: Samuel S. Cox (N. Y.), appointed for Feb. 17, May 12 and June 19, 1876, and Milton Saylor (Ohio), appointed for June 4, 1876. ⁷ Died 1934 after adjournment of 2nd session of 73rd Congress. ⁸ Died during 2d session of 74th Congress. ⁹ Died during 3d session of 76th Congress.

The White House

Source: National Park Service.

The White House, the official residence of the President, is located on Pennsylvania Avenue in Washington, D. C. The site covering about 18 acres was selected by President Washington and Pierre Charles L'Enfant, and the architect was James Hoban. The design of the mansion is said to have been suggested by the Duke of Leinster's Palace in Ireland. The cornerstone was laid Oct. 13, 1792, and the first residents were President and Mrs. John Adams in Nov. 1800. The building was fired by the British in 1814, and the sandstone exterior was painted white during the course of reconstruction.

The rooms for public functions are on the first floor; on the second and third are the President's apartments. The most celebrated public room is the East Room, where formal receptions take place. Other public rooms are the Red Room, the Green Room, and the

Blue Room. The State Dining Room is used for formal dinners.

The Executive Office, a three-story structure at the west end of the West Terrace, was added to the original building in 1902 to accommodate the President's office staff, and several additions have since been made. In 1942, a three-story building was erected at the end of the East Terrace, and now serves as the White House main entrance. In 1948, a second-story balcony was added to the White House inside the Ionic pillars of the south portico.

From Nov. 1948 to Mar. 1952, the White House was closed for social engagements and sightseers because of the deterioration of the building and the fear that it might collapse at any time. The walls were retained and strengthened, and the interior was rebuilt. There are now 132 rooms instead of the former 62.

THE DECLARATION OF INDEPENDENCE

IN CONGRESS, JULY 4, 1776

THE UNANIMOUS DECLARATION of the thirteen united STATES OF AMERICA.

WHEN in the Course of human events it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the Laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.—That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed,—That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness. Prudence, indeed, will dictate that Governments long established should not be changed for light and transient causes; and accordingly all experience hath shewn that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same Object evinces a design to reduce them under absolute Despotism, it is their right, it is their duty, to throw off such Government, and to provide new Guards for their future security.—Such has been the patient sufferance of these Colonies; and such is now the necessity which constrains them to alter their former Systems of Government. The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. To prove this, let Facts be submitted to a candid world.

He has refused his Assent to Laws, the most wholesome and necessary for the public good.

He has forbidden his Governors to pass Laws of immediate and pressing importance, unless suspended in their operation till his Assent should be obtained; and when so suspended, he has utterly neglected to attend to them.

He has refused to pass other Laws for the accommodation of large districts of people, unless those people would relinquish the right of Representation in the Legislature, a right inestimable to them and formidable to tyrants only.

He has called together legislative bodies at places unusual, uncomfortable, and distant from the depository of their Public Records, for the sole purpose of fatiguing them into compliance with his measures.

He has dissolved Representative Houses repeatedly, for opposing with manly firmness his invasions on the rights of the people.

He has refused for a long time, after such dissolutions, to cause others to be elected; whereby the Legislative Powers, incapable of Annihilation, have returned to the People at large for their exercise; the State remaining in the mean time exposed to all the dangers of invasion from without, and convulsions within.

NOTE: On April 12, 1776, the legislature of North Carolina authorized its delegates to the Continental Congress to join with others in a declaration of separation from Great Britain; the first colony to instruct its delegates to take the actual initiative was Virginia on May 15. On June 7, 1776, Richard Henry Lee of Virginia offered a resolution to the Congress to the effect "that these United Colonies are, and of right ought to be, free and independent States. . . ." A committee, consisting of Thomas Jefferson, John Adams, Benjamin Franklin, Robert R. Livingston and Roger

Sherman was organized to "prepare a declaration to the effect of the said first resolution." The Declaration of Independence was adopted on July 4, 1776.

Most delegates signed the Declaration August 2, but George Wythe (Va.) signed August 27; Richard Henry Lee (Va.), Elbridge Gerry (Mass.) and Oliver Wolcott (Conn.) in September; Matthew Thornton (N. H.), not a delegate until September, in November; and Thomas McKean (Del.), although present on July 4, not until 1781 by special permission, having served in the army in the interim.

He has endeavoured to prevent the population of these States; for that purpose obstructing the Laws for Naturalization of Foreigners; refusing to pass others to encourage their migrations hither, and raising the conditions of new Appropriations of Lands.

He has obstructed the Administration of Justice, by refusing his Assent to Laws for establishing Judiciary Powers.

He has made Judges dependent on his Will alone, for the tenure of their offices, and the amount and payment of their salaries.

He has erected a multitude of New Offices, and sent hither swarms of Officers to harass our people, and eat out their substance.

He has kept among us, in times of peace, Standing Armies without the Consent of our legislatures.

He has affected to render the Military independent of and superior to the Civil Power.

He has combined with others to subject us to a jurisdiction foreign to our constitution, and unacknowledged by our laws; giving his Assent to their Acts of pretended Legislation:

For quartering large bodies of armed troops among us:

For protecting them, by a mock Trial, from punishment for any Murders which they should commit on the Inhabitants of these States:

For cutting off our Trade with all parts of the world:

For imposing Taxes on us without our Consent:

For depriving us in many cases, of the benefits of Trial by Jury:

For transporting us beyond Seas to be tried for pretended offences:

For abolishing the free System of English Laws in a neighbouring Province, establishing therein an Arbitrary government, and enlarging its Boundaries so as to render it at once an example and fit instrument for introducing the same absolute rule into these Colonies:

For taking away our Charters, abolishing our most valuable Laws and altering fundamentally the Forms of our Governments:

For suspending our own Legislatures, and declaring themselves invested with power to legislate for us in all cases whatsoever.

He has abdicated Government here, by declaring us out of his Protection and waging War against us.

He has plundered our seas, ravaged our Coasts, burnt our towns, and destroyed the lives of our people.

He is at this time transporting large Armies of foreign Mercenaries to compleat the works of death, desolation and tyranny, already begun with circumstances of Cruelty & Perfidy scarcely paralleled in the most barbarous ages, and totally unworthy the Head of a civilized nation.

He has constrained our fellow Citizens taken Captive on the high Seas to bear Arms against their Country, to become the executioners of their friends and Brethren, or to fall themselves by their Hands.

He has excited domestic insurrections amongst us, and has endeavoured to bring on the inhabitants of our frontiers, the merciless Indian Savages, whose known rule of warfare, is an undistinguished destruction of all ages, sexes and conditions.

In every stage of these Oppressions We have Petitioned for Redress in the most humble terms: Our repeated Petitions have been answered only by repeated injury. A Prince, whose character is thus marked by every act which may define a Tyrant, is unfit to be the ruler of a free people.

Nor have We been wanting in attentions to our Brittish brethren. We have warned them from time to time of attempts by their legislature to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity, and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connections and correspondence. They too have been deaf to the voice of justice and of consanguinity. We must, therefore, acquiesce in the necessity, which denounces our Separation, and hold them, as we hold the rest of mankind, Enemies in War, in Peace Friends.

WE, THEREFORE, the Representatives of the UNITED STATES OF AMERICA, in General Congress, Assembled, appealing to the Supreme Judge of the world for the rectitude of our intentions, do, in the Name, and by Authority of the good People of these Colonies, solemnly publish and declare, That these United Colonies are, and of Right ought to be

FREE AND INDEPENDENT STATES; that they are Absolved from all Allegiance to the British Crown, and that all political connection between them and the State of Great Britain, is and ought to be totally dissolved; and that as Free and Independent States, they have full Power to levy War, conclude Peace, contract Alliances, establish Commerce, and to do all other Acts and Things which Independent States may of right do.—And for the support of this Declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our Lives, our Fortunes and our sacred Honor.

JOHN HANCOCK.

New Hampshire.

Josiah Bartlett,
Wm. Whipple,
Matthew Thornton.

Rhode Island.

Step. Hopkins,
William Ellery.

Connecticut.

Roger Sherman,
Sam'l Huntington,
Wm. Williams,
Oliver Wolcott.

New York.

Wm. Floyd,
Phil. Livingston,
Frans. Lewis,
Lewis Morris.

New Jersey.

Richd. Stockton,
Jno. Witherspoon,
Fras. Hopkinson,
John Hart,
Abra. Clark.

Pennsylvania.

Robt. Morris,
Benjamin Rush,
Benja. Franklin,
John Morton,
Geo. Clymer,
Jas. Smith,
Geo. Taylor,
James Wilson,
Geo. Ross.

Massachusetts-Bay.

Saml. Adams,
John Adams,
Robt. Treat Paine,
Elbridge Gerry.

Delaware.

Caesar Rodney,
Geo. Read,
Tho. M'Kean.

Maryland.

Samuel Chase,
Wm. Paca,
Thos. Stone,
Charles Carroll of Carrollton.

Virginia.

George Wythe,
Richard Henry Lee,
Th. Jefferson,
Benja. Harrison,
Ths. Nelson, Jr.,
Francis Lightfoot Lee,
Carter Braxton.

North Carolina.

Wm. Hooper,
Joseph Hewes,
John Penn.

South Carolina.

Edward Rutledge,
Thos. Heyward, Junr.,
Thomas Lynch, Junr.,
Arthur Middleton.

Georgia.

Button Gwinnett,
Lyman Hall,
Geo. Walton.

IN CONGRESS

JANUARY, 18, 1777.

Ordered:

That an authenticated copy of the Declaration of Independency, with the names of the Members of Congress subscribing the same, be sent to each of the United States, and that they be desired to have the same put on record.

By order of Congress.

Attest, CHAS. THOMSON, *Secy.* A true copy. JOHN HANCOCK, *Presidt.*

The Statue of Liberty

The Statue of Liberty ("Liberty Enlightening the World") is a 225-ton copper female figure, 152 ft. 5 in. in height, facing the ocean from Liberty* Island in New York Harbor. The right hand holds aloft a torch, and the left hand carries a tablet upon which is inscribed: "July 4, 1776."

The statue was designed by Frédéric Auguste Bartholdi, at the request of the French government, as a present to the U. S. to commemorate the centennial of American independence. It cost \$450,000.

The pedestal, 151 ft. 1 in. in height, was erected by the U. S., and its cost of \$350,000 was met by popular subscription in this country. The cornerstone was laid Aug.

* Called Bedloe's Island prior to 1956.

5, 1884, and the unvelling of the statue took place Oct. 28, 1886.

On a tablet inside the main entrance of the pedestal is engraved the following sonnet, written by Emma Lazarus:

The New Colossus

Not like the brazen giant of Greek fame,
With conquering limbs astride from land to land;
Here at our sea-washed, sunset gates shall stand
A mighty woman with a torch, whose flame
Is the imprisoned lightning, and her name
Mother of Exiles. From her beacon hand
Glows world-wide welcome; her mild eyes com-
mand
The air-brided harbor that twin cities frame.
"Keep, ancient lands, your storied pomp!" cries she
With silent lips. "Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tost to me,
I lift my lamp beside the golden door."

CONSTITUTION of the UNITED STATES OF AMERICA

THE oldest federal constitution in existence was framed by a convention of delegates from twelve of the thirteen original states in Philadelphia in May 1787, Rhode Island failing to send a delegate. George Washington presided over the session, which lasted until September 17, 1787. The draft (originally a preamble and seven Articles) was submitted to all thirteen states and was to become effective when ratified by nine states. It went into effect on the first Wednesday in March 1789, having been ratified by New Hampshire, the ninth state to approve, on June 21, 1788. The states ratified the Constitution in the following order:

Delaware	December 7, 1787	South Carolina	May 23, 1788
Pennsylvania	December 12, 1787	New Hampshire	June 21, 1788
New Jersey	December 18, 1787	Virginia	June 25, 1788
Georgia	January 2, 1788	New York	July 26, 1788
Connecticut	January 9, 1788	North Carolina	November 21, 1789
Massachusetts	February 6, 1788	Rhode Island	May 29, 1790
Maryland	April 28, 1788		

Outline of the Constitution

ARTICLE I

SEC. 1. Legislative powers; in whom vested.

SEC. 2. House of Representatives, how and by whom chosen—Qualifications of a Representative—Representatives and direct taxes, how apportioned—Enumeration—Vacancies to be filled—Power of choosing officers, and of impeachment.

SEC. 3. Senators, how and by whom chosen—How classified—State Executive, when to make temporary appointments, in case, etc.—Qualifications of a Senator—President of the Senate, his right to vote—President pro tem., and other officers of the Senate, how chosen—Power to try impeachments—When President is tried, Chief Justice to preside—Sentence.

SEC. 4. Times, etc., of holding elections, how prescribed—At least one Session in each year.

SEC. 5. Membership—Quorum—Adjournments—Rules—Power to punish or expel—Journal—Time of adjournments, how limited, etc.

SEC. 6. Compensation—Privileges—Disqualification in certain cases.

SEC. 7. House to originate all revenue bills—Veto—Bill may be passed by two-thirds of each house, notwithstanding, etc.—Bill, not returned in ten days, to become a law—Provisions as to orders, concurrent resolutions, etc.

SEC. 8. Powers of Congress.

SEC. 9. Provision as to migration or importation of certain persons—Habeas Corpus—Bills of attainder, etc.—Taxes, how apportioned—No export duty—No commercial preference—Money, how drawn from treasury, etc.—No titular nobility—Officers not to receive presents, etc.

SEC. 10. States prohibited from the exercise of certain powers.

ARTICLE II

SEC. 1. President; his term of office—Electors of President; number and how appointed—Electors to vote on same day—Qualification of President—On whom his duties devolve in case of his removal, death, etc.—President's compensation—His oath of office.

SEC. 2. President to be commander in chief—He may require opinions of Cabinet Officers, etc., may pardon—Treaty-making power—Nomination of certain officers—When President may fill vacancies.

SEC. 3. President shall communicate to Congress—He may convene and adjourn Congress, in case of disagreement, etc.—Shall receive ambassadors, execute laws, and commission officers.

SEC. 4. All civil offices forfeited for certain crimes.

ARTICLE III

SEC. 1. Judicial powers—Tenure—Compensation.

SEC. 2. Judicial power; to what cases it extends—Original jurisdiction of Supreme Court—Appellate—Trial by jury, etc.—Trial, where.

SEC. 3. Treason defined—Proof of—Punishment of.

ARTICLE IV

SEC. 1. Each State to give credit to the public acts, etc., of every other State.

SEC. 2. Privileges of citizens of each State—Fugitives from justice to be delivered up—Persons held to service having escaped, to be delivered up.

SEC. 3. Admission of new States—Power of Congress over territory and other property.

SEC. 4. Republican form of government guaranteed—Each State to be protected.

ARTICLE V

Constitution; how amended—Proviso.

ARTICLE VI

Certain debts, etc., declared valid—Supremacy of Constitution, treaties, and laws of the United States—Oath to support Constitution, by whom taken—No religious test.

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- I. Religious establishment prohibited—Freedom of speech, of the press, and right to petition.
- II. Right to keep and bear arms.
- III. No soldier to be quartered in any house, unless, etc.
- IV. Right of search and seizure regulated.
- V. Provisions concerning prosecution, trial and punishment—Private property not to be taken for public use, without compensation.
- VI. Further provision respecting criminal prosecutions.
- VII. Right of trial by jury secured.

VIII. Excessive bail or fines and cruel punishments prohibited.

IX. Rule of construction of Constitution.

X. Same subject; rights of States.

XI. Same subject; judicial powers construed.

XII. Manner of choosing President and Vice President.

XIII. Slavery abolished.

XIV. Citizenship; representation—Public debt.

XV. Right of suffrage—By whom exercised.

XVI. Taxes on incomes.

XVII. Election of Senators—Filling of vacancies.

XVIII. Prohibition.

XIX. Suffrage; not to be denied because of sex.

XX. Commencement of terms of President, Vice President and members of Congress; time of assembling of Congress.

XXI. Repeal of Prohibition.

XXII. No person to serve as President for more than two terms.

The Constitution of the United States of America

PREAMBLE.—WE THE PEOPLE of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

ARTICLE I

Section 1

Legislative powers vested in Congress.—All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2

Composition of the House of Representatives.—1. The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, and the Electors in each State shall have the Qualifications requisite for Electors of the most numerous Branch of the State Legislature.

Qualifications of Representatives.—2. No Person shall be a Representative who shall not have attained to the Age of twenty-five Years, and been seven Years a Citizen

of the United States, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.

Apportionment of Representatives and direct taxes—census.*—3. [Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons.] The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct. The Number of Representatives shall not exceed one for every thirty Thousand, but each State shall have at Least one Representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to chuse three, Massachusetts eight, Rhode-Island and Providence Plantations one, Connecticut five, New York six, New Jersey four, Pennsylvania eight, Delaware one, Maryland six, Virginia ten, North Carolina five, South Carolina five, and Georgia three.

Filling of vacancies in representation.—4. When vacancies happen in the Representation from any State, the Executive

* The clause included in brackets is amended by the 14th Amendment, Section 2.

Authority thereof shall issue Writs of Election to fill such Vacancies.

Selection of officers; power of impeachment.—5. The House of Representatives shall chuse their Speaker and other Officers; and shall have the sole Power of Impeachment.

Section 3*

The Senate.—[1. The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof, for six Years; and each Senator shall have one Vote.]

Classification of Senators; filling of vacancies.—2. Immediately after they shall be assembled in Consequence of the first Election, they shall be divided as equally as may be into three Classes. The Seats of the Senators of the first Class shall be vacated at the Expiration of the second Year, of the second Class at the Expiration of the fourth Year, and of the third Class at the Expiration of the sixth Year, so that one-third may be chosen every second Year; and if Vacancies happen by Resignation, or otherwise, during the Recess of the Legislature of any State, the Executive thereof may make temporary Appointments [until the next Meeting of the Legislature, which shall then fill such Vacancies].

Qualification of Senators.—3. No Person shall be a Senator who shall not have attained to the Age of thirty Years, and been nine Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State for which he shall be chosen.

Vice President to be President of Senate.

—4. The Vice President of the United States shall be President of the Senate, but shall have no Vote, unless they be equally divided.

Selection of Senate officers; President pro tempore.—5. The Senate shall chuse their other Officers, and also a President pro tempore, in the Absence of the Vice President, or when he shall exercise the Office of President of the United States.

Senate to try impeachments.—6. The Senate shall have the sole Power to try all Impeachments. When sitting for that Purpose, they shall be on Oath or Affirmation. When the President of the United States is tried, the Chief Justice shall preside: And no Person shall be convicted without the Concurrence of two thirds of the Members present.

Judgment in cases of impeachment.—7. Judgment in Cases of Impeachment shall not extend further than to removal from Office, and disqualification to hold and en-

joy any Office of honor, Trust, or Profit under the United States: but the Party convicted shall nevertheless be liable and subject to Indictment, Trial, Judgment and Punishment, according to Law.

Section 4

Control of congressional elections.—1. The Times, Places and Manner of holding Elections for Senators and Representatives, shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by Law make or alter such Regulations, except as to the Places of chusing Senators.

Time for assembling of Congress.†—2. The Congress shall assemble at least once in every Year, and such Meeting shall be on the first Monday in December, unless they shall by Law appoint a different Day.

Section 5

Each house to be the judge of the election and qualifications of its members; regulations as to quorum.—1. Each House shall be the Judge of the Elections, Returns and Qualifications of its own Members, and a Majority of each shall constitute a Quorum to do Business; but a smaller Number may adjourn from day to day, and may be authorized to compel the Attendance of absent Members, in such Manner, and under such Penalties as each House may provide.

Each house to determine its own rules.—2. Each House may determine the Rules of its Proceedings, punish its Members for disorderly Behaviour, and, with the Concurrence of two thirds, expel a Member.

Journals and yeas and nays.—3. Each House shall keep a Journal of its Proceedings, and from time to time publish the same, excepting such Parts as may in their Judgment require Secrecy; and the Yeas and Nays of the Members of either House on any question shall, at the Desire of one fifth of those Present, be entered on the Journal.

Adjournment.—4. Neither House, during the Session of Congress shall, without the Consent of the other, adjourn for more than three days, nor to any other Place than that in which the two Houses shall be sitting.

Section 6

Compensation and privileges of Members of Congress.—1. The Senators and Representatives shall receive a Compensation for their Services, to be ascertained by Law, and paid out of the Treasury of the United States. They shall in all Cases, except Treason, Felony and Breach of the

* The 1st paragraph of this section and as much of the 2nd paragraph as relates to filling vacancies are amended by the 17th Amendment.

† Amended by the 20th Amendment, Section 2.

Peace, be privileged from Arrest during their Attendance at the Session of their respective Houses, and in going to and returning from the same; and for any Speech or Debate in either House, they shall not be questioned in any other Place.

Incompatible offices; exclusions.—2. No Senator or Representative shall, during the Time for which he was elected, be appointed to any civil Office under the Authority of the United States, which shall have been created, or the Emoluments whereof shall have been increased during such time; and no Person holding any Office under the United States, shall be a Member of either House during his Continuance in Office.

Section 7

Revenue bills to originate in House.—1. All Bills for raising Revenue shall originate in the House of Representatives; but the Senate may propose or concur with Amendments as on other Bills.

Manner of passing bills; veto power of President.—2. Every Bill which shall have passed the House of Representatives and the Senate, shall, before it becomes a Law, be presented to the President of the United States; If he approve he shall sign it, but if not he shall return it, with his Objections to that House in which it shall have originated, who shall enter the Objections at large on their Journal, and proceed to reconsider it. If after such Reconsideration two thirds of that House shall agree to pass the Bill, it shall be sent, together with the Objections, to the other House, by which it shall likewise be reconsidered, and if approved by two thirds of that House, it shall become a Law. But in all such Cases the Votes of both Houses shall be determined by Yeas and Nays, and the Names of the Persons voting for and against the Bill shall be entered on the Journal of each House respectively. If any Bill shall not be returned by the President within ten Days (Sundays excepted) after it shall have been presented to him, the Same shall be a Law, in like Manner as if he had signed it, unless the Congress by their Adjournment prevent its Return, in which Case it shall not be a Law.

Concurrent orders or resolutions, to be passed by President.—3. Every Order, Resolution, or Vote to which the Concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment) shall be presented to the President of the United States; and before the Same shall take Effect, shall be approved by him, or being disapproved by him, shall be repassed by two thirds of the Senate and House of Representatives, according to the Rules and Limitations prescribed in the Case of a Bill.

Section 8

General powers of Congress.*

The Congress shall have Power.—1. To lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States; but all Duties, Imposts and Excises shall be uniform throughout the United States;

Borrowing of money.—2. To borrow Money on the credit of the United States;

Regulation of commerce.—3. To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes;

Naturalization and bankruptcy.—4. To establish a uniform Rule of Naturalization, and uniform Laws on the subject of Bankruptcies throughout the United States;

Money, weights and measures.—5. To coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures;

Counterfeiting.—6. To provide for the Punishment of counterfeiting the Securities and current Coin of the United States;

Post offices.—7. To establish Post Offices and post Roads;

Patents and copyrights.—8. To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;

Inferior courts.—9. To constitute Tribunals inferior to the supreme Court;

Piracies and felonies.—10. To define and punish Piracies and Felonies committed on the high Seas, and Offences against the Law of Nations;

War; marque and reprisal.—11. To declare War, grant Letters of Marque and Reprisal, and make Rules concerning Captures on Land and Water;

Armies.—12. To raise and support Armies, but no Appropriation of Money to that Use shall be for a longer Term than two Years;

Navy.—13. To provide and maintain a Navy;

Land and naval forces.—14. To make Rules for the Government and Regulation of the land and naval Forces;

Calling out militia.—15. To provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions;

Organizing, arming and disciplining militia.—16. To provide for organizing, arming, and disciplining, the Militia, and for governing such Part of them as may be

* By the 16th Amendment, Congress is given the power to lay and collect taxes on incomes.

employed in the Service of the United States, reserving to the States respectively, the Appointment of the Officers, and the Authority of training the Militia according to the discipline prescribed by Congress;

Exclusive legislation over District of Columbia.—17. To exercise exclusive Legislation in all Cases whatsoever, over such District (not exceeding ten Miles square) as may, by Cession of particular States, and the Acceptance of Congress, become the Seat of the Government of the United States, and to exercise like Authority over all Places purchased by the Consent of the Legislature of the State in which the Same shall be, for the Erection of Forts, Magazines, Arsenals, dock-Yards, and other needful Buildings;—And

To enact laws necessary to enforce Constitution.—18. To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof.

Section 9

Migration or importation of certain persons not to be prohibited before 1808.—1. The Migration or Importation of such Persons as any of the States now existing shall think proper to admit, shall not be prohibited by the Congress prior to the Year one thousand eight hundred and eight, but a Tax or duty may be imposed on such Importation, not exceeding ten dollars for each Person.

Writ of habeas corpus not to be suspended; exception.—2. The Privilege of the Writ of Habeas Corpus shall not be suspended, unless when in Cases of Rebellion or Invasion the public Safety may require it.

Bills of attainder and ex post facto laws prohibited.—3. No Bill of Attainder or ex post facto Law shall be passed.

Capitation and other direct taxes.—4. No Capitation, or other direct, Tax shall be laid, unless in Proportion to the Census or Enumeration herein before directed to be taken.*

Exports not to be taxed.—5. No Tax or Duty shall be laid on Articles exported from any State.

No preference to be given to ports of any State; interstate shipping.—6. No Preference shall be given by any Regulation of Commerce or Revenue to the Ports of one State over those of another: nor shall Vessels bound to, or from, one State, be obliged to enter, clear, or pay Duties in another.

Money, how drawn from treasury; finan-

cial statements to be published.—7. No Money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law; and a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time.

Titles of nobility not to be granted; acceptance by government officers of favors from foreign powers.—8. No Title of Nobility shall be granted by the United States: And no Person holding any Office of Profit or Trust under them, shall, without the Consent of the Congress, accept of any present, Emolument, Office, or Title, of any kind whatever, from any King, Prince, or foreign State.

Section 10

Limitations of the powers of the several States.—1. No State shall enter into any Treaty, Alliance, or Confederation; grant Letters of Marque and Reprisal; coin Money; emit Bills of Credit; make any Thing but gold and silver Coin a Tender in Payment of Debts; pass any Bill of Attainder, ex post facto Law, or Law impairing the Obligation of Contracts, or grant any Title of Nobility.

State imposts and duties.—2. No State shall, without the Consent of the Congress, lay any Imposts or Duties on Imports or Exports, except what may be absolutely necessary for executing its inspection Laws: and the net Produce of all Duties and Imposts, laid by any State on Imports or Exports, shall be for the Use of the Treasury of the United States; and all such Laws shall be subject to the Revision and Control of the Congress.

Further restrictions on powers of States.—3. No State shall, without the Consent of Congress, lay any Duty of Tonnage, keep Troops, or Ships of War in time of Peace, enter into any Agreement or Compact with another State, or with a foreign Power, or engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

ARTICLE II

Section 1

The President; the executive power.—1. The executive Power shall be vested in a President of the United States of America. He shall hold his Office during the Term of four Years, and, together with the Vice President, chosen for the same Term, be elected, as follows

Appointment and qualifications of presidential electors.—2. Each State shall appoint, in such Manner as the Legislature thereof may direct, a Number of Electors, equal to the whole Number of Senators and

* See the 16th Amendment.

Representatives to which the State may be entitled in the Congress: but no Senator or Representative, or Person holding an Office of Trust or Profit under the United States, shall be appointed an Elector.

Original method of electing the President and Vice-President.*—[The Electors shall meet in their respective States, and vote by Ballot for two Persons, of whom one at least shall not be an Inhabitant of the same State with themselves. And they shall make a List of all the Persons voted for, and of the Number of Votes for each; which List they shall sign and certify, and transmit sealed to the Seat of the Government of the United States, directed to the President of the Senate. The President of the Senate shall, in the Presence of the Senate and House of Representatives, open all the Certificates, and the Votes shall then be counted. The Person having the greatest Number of Votes shall be the President, if such Number be a Majority of the whole Number of Electors appointed; and if there be more than one who have such Majority, and have an equal Number of Votes, then the House of Representatives shall immediately chuse by Ballot one of them for President; and if no person have a Majority, then from the five highest on the List the said House shall in like Manner chuse the President. But in chusing the President, the Votes shall be taken by States, the Representation from each State having one Vote; A quorum for this Purpose shall consist of a Member or Members from two thirds of the States, and a Majority of all the States shall be necessary to a Choice. In every Case, after the Choice of the President, the Person having the greatest Number of Votes of the Electors shall be the Vice President. But if there should remain two or more who have equal Votes, the Senate should chuse from them by Ballot the Vice President.]

Congress may determine time of choosing electors and day for casting their votes.—3. The Congress may determine the Time of chusing the Electors, and the Day on which they shall give their Votes; which Day shall be the same throughout the United States.

Qualifications for the office of President.†—4. No Person except a natural born Citizen, or a Citizen of the United States, at the time of the Adoption of this Constitution, shall be eligible to the Office of President; neither shall any Person be eligible to that Office who shall not have attained to the Age of thirty five Years, and been fourteen Years a Resident within the United States.

Filling vacancy in the office of Presi-

dent.‡—5. In Case of the Removal of the President from Office, or of his Death, Resignation, or Inability to discharge the Powers and Duties of the said Office, the same shall devolve on the Vice President, and the Congress may by Law provide for the Case of Removal, Death, Resignation or Inability, both of the President and Vice President, declaring what Officer shall then act as President, and such Officer shall act accordingly, until the Disability be removed, or a President shall be elected.

Compensation of the President.—6. The President shall, at stated Times, receive for his Services, a Compensation, which shall neither be increased nor diminished during the Period for which he shall have been elected, and he shall not receive within that Period any other Emolument from the United States, or any of them.

Oath to be taken by the President.—7. Before he enter on the Execution of his Office, he shall take the following Oath or Affirmation:—"I do solemnly swear (or affirm) that I will faithfully execute the Office of President of the United States, and will to the best of my Ability, preserve, protect and defend the Constitution of the United States."

Section 2

The President to be commander-in-chief of army and navy and head of executive departments; may grant reprieves and pardons.—1. The President shall be Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual Service of the United States; he may require the Opinion, in writing, of the principal Officer in each of the executive Departments, upon any subject relating to the Duties of their respective Offices, and he shall have Power to grant Reprieves and Pardons for Offences against the United States, except in Cases of Impeachment.

President may, with concurrence of Senate, make treaties, appoint ambassadors, etc.; appointment of inferior officers, authority of Congress over.—2. He shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur; and he shall nominate, and by and with the Advice and Consent of the Senate, shall appoint Ambassadors, other public Ministers and Consuls, Judges of the supreme Court, and all other Officers of the United States, whose Appointments are not herein otherwise provided for, and which shall be established by Law: but the Congress may by Law vest the Appointment of such inferior Officers, as they think proper, in the President alone, in

* This clause has been superseded by the 12th Amendment.

† For qualifications of the Vice President, see 12th Amendment.

‡ Amended by the 20th Amendment, Sections 3 and 4.

the Courts of Law, or in the Heads of Departments.

President may fill vacancies in office during recess of Senate.—3. The President shall have Power to fill up all Vacancies that may happen during the Recess of the Senate, by granting Commissions which shall expire at the End of their next Session.

Section 3

President to give advice to Congress; may convene or adjourn it on certain occasions; to receive ambassadors, etc.; have laws executed and commission all officers.—He shall from time to time give to the Congress Information of the State of the Union, and recommend to their Consideration such Measures as he shall judge necessary and expedient; he may, on extraordinary Occasions, convene both Houses, or either of them, and in Case of Disagreement between them, with Respect to the Time of Adjournment, he may adjourn them to such Time as he shall think proper; he shall receive Ambassadors and other public Ministers; he shall take Care that the Laws be faithfully executed, and shall Commission all the Officers of the United States.

Section 4

All civil officers removable by impeachment.—1. The President, Vice President and all civil Officers of the United States, shall be removed from Office on Impeachment for, and Conviction of, Treason, Bribery, or other high Crimes and Misdemeanors.

ARTICLE III

Section 1

Judicial powers; how vested; term of office and compensation of judges.—The judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish. The Judges, both of the supreme and inferior Courts, shall hold their Offices during good Behaviour, and shall, at stated Times, receive for their Services, a Compensation, which shall not be diminished during their Continuance in Office.

Section 2

Jurisdiction of Federal courts.*—1. The judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority;—to all Cases affecting Ambassadors, other public Ministers and Consuls;—to all Cases of Admiralty and maritime Jurisdiction;—to Controversies to which the United States shall be a Party;—to Controversies between two or more States;—between a State and

Citizens of another State;—between Citizens of different States,—between Citizens of the same State claiming Lands under Grants of different States, and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects.

Original and appellate jurisdiction of Supreme Court.—2. In all Cases affecting Ambassadors, other public Ministers and Consuls, and those in which a State shall be Party, the supreme Court shall have original Jurisdiction. In all the other Cases before mentioned, the supreme Court shall have appellate Jurisdiction, both as to Law and Fact, with such Exceptions, and under such Regulations as the Congress shall make.

Trial of all crimes, except impeachment, to be by jury.—3. The Trial of all Crimes, except in Cases of Impeachment, shall be by Jury; and such Trial shall be held in the State where the said Crimes shall have been committed; but when not committed within any State, the Trial shall be at such Place or Places as the Congress may by Law have directed.

Section 3

Treason defined; conviction of.—1. Treason against the United States, shall consist only in levying War against them, or, in adhering to their Enemies, giving them Aid and Comfort. No Person shall be convicted of Treason unless on the Testimony of two Witnesses to the same overt Act, or on Confession in open Court.

Congress to declare punishment for treason; proviso.—2. The Congress shall have power to declare the Punishment of Treason, but no Attainder of Treason shall work Corruption of Blood, or Forfeiture except during the Life of the Person attainted.

ARTICLE IV

Section 1

Each State to give full faith and credit to the public acts and records of other States.—Full Faith and Credit shall be given in each State to the public Acts, Records, and judicial Proceedings of every other State. And the Congress may by general Laws prescribe the Manner in which such Acts, Records and Proceedings shall be proved, and the Effect thereof.

Section 2

Privileges of citizens.—1. The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States.

Extradition between the several States.—2. A Person charged in any State with Treason, Felony, or other Crime, who shall flee from Justice, and be found in another State, shall on Demand of the executive

* This section is abridged by the 11th Amendment.

Authority of the State from which he fled, be delivered up, to be removed to the State having Jurisdiction of the Crime.

Persons held to labor or service in one State, fleeing to another, to be returned.*

—3. No Person held to Service or Labour in one State, under the Laws thereof, escaping into another, shall, in Consequence of any Law or Regulation therein, be discharged from such Service or Labour, but shall be delivered up on Claim of the Party to whom such Service or Labour may be due.

Section 3

New States.—1. New States may be admitted by the Congress into this Union; but no new State shall be formed or erected within the Jurisdiction of any other State; nor any State be formed by the Junction of two or more States, or Parts of States, without the Consent of the Legislatures of the States concerned as well as of the Congress.

Regulations concerning territory.—2. The Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States; and nothing in this Constitution shall be so construed as to Prejudice any Claims of the United States, or of any particular State.

Section 4

Republican form of government and protection guaranteed the several States.—The United States shall guarantee to every State in this Union a Republican Form of Government, and shall protect each of them against Invasion; and on Application of the Legislature, or of the Executive (when the Legislature cannot be convened) against domestic Violence.

ARTICLE V

Ways in which the Constitution can be amended.—The Congress, whenever two thirds of both Houses shall deem it necessary, shall propose Amendments to this Constitution, or, on the Application of the Legislatures of two thirds of the several States, shall call a Convention for proposing Amendments, which, in either Case, shall be valid to all Intents and Purposes, as Part of this Constitution, when ratified by the Legislatures of three fourths of the several States, or by Conventions in three fourths thereof, as the one or the other Mode of Ratification may be proposed by the Congress; Provided that no Amendment which may be made prior to the Year One thousand eight hundred and eight shall in any Manner affect the first and fourth Clauses in the Ninth Section of the first Article; and that no State, without its Consent, shall be deprived of its equal Suffrage in the Senate.

* See the 13th Amendment.

ARTICLE VI

Debts contracted under the confederation secured.—1. All Debts contracted and Engagements entered into, before the Adoption of this Constitution, shall be as valid against the United States under this Constitution, as under the Confederation.

Constitution, laws and treaties of the United States to be supreme.—2. This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

Who shall take constitutional oath; no religious test as to official qualification.—3. The Senators and Representatives before mentioned, and the Members of the several State Legislatures, and all executive and judicial Officers, both of the United States and of the several States, shall be bound by Oath or Affirmation, to support this Constitution; but no religious Test shall ever be required as a Qualification to any Office or public Trust under the United States.

ARTICLE VII

Constitution to be considered adopted when ratified by nine States.—The Ratification of the Conventions of nine States shall be sufficient for the Establishment of this Constitution between the States so ratifying the Same.

Done in Convention by the Unanimous Consent of the States present the Seventeenth Day of September in the Year of our Lord one thousand seven hundred and Eighty seven and of the Independence of the United States of America the Twelfth. In witness whereof We have hereunto subscribed our Names.

GO. WASHINGTON

Presdt and Deputy from Virginia

NEW HAMPSHIRE

John Langdon Nicholas Gilman

MASSACHUSETTS

Nathaniel Gorham Rufus King

CONNECTICUT

Wm Saml Johnson Roger Sherman

NEW YORK

Alexander Hamilton

NEW JERSEY

Wm: Livingston Wm Paterson
David Brearley Jona: Dayton

PENNSYLVANIA

B Franklin Thomas Mifflin
Robt Morris Geo. Clymer
Thos FitzSimons Jared Ingersoll
James Wilson Gouv Morris

DELAWARE

Geo: Read Gunning Bedford Jun
John Dickinson Richard Bassett
Jaco: Broom

MARYLAND

James McHenry Dan of St Thos Jenifer
Dani Carroll

John Blair — James Madison Jr.

Wm Blount NORTH CAROLINA
Hu Williamson Richd Dobbs Spaight

J. Rutledge SOUTH CAROLINA
Charles Pinckney Charles Cotesworth Pinckney,
Pierce Butler

William Few GEORGIA
Abr Baldwin
Attest: William Jackson, Secretary.

AMENDMENTS TO THE CONSTITUTION OF THE UNITED STATES

(Amendments I to X inclusive, popularly known as the Bill of Rights, were proposed and sent to the states by the first session of the First Congress. They became effective Dec. 15, 1791.)

ARTICLE I

Freedom of religion, speech, of the press, and right of petition.—Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.

ARTICLE II

Right of people to bear arms not to be infringed.—A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

ARTICLE III

Quartering of troops.—No Soldier shall, in time of peace be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law.

ARTICLE IV

Persons and houses to be secure from unreasonable searches and seizures.—The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V

Trials for crimes; just compensation for private property taken for public use.—No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

ARTICLE VI

Civil rights in trials for crimes enumerated.—In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defence.

ARTICLE VII

Civil rights in civil suits.—In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

ARTICLE VIII

Excessive bail, fines and punishments prohibited.—Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX

Reserved rights of people.—The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.

ARTICLE X

Powers not delegated, reserved to states and people respectively.—The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

ARTICLE XI

(The proposed amendment was sent to the states Mar. 5, 1794, by the Third Congress. It became effective Jan. 8, 1798.)

Judicial power of United States not to extend to suits against a State.—The Judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by Citizens of another State, or by Citizens or Subjects of any Foreign State.

ARTICLE XII

(The proposed amendment was sent to the states Dec. 12, 1803, by the Eighth Congress. It became effective Sept. 26, 1804.)

Present mode of electing President and Vice-President by electors.*—The Electors shall meet in their respective states, and vote by ballot for President and Vice-President, one of whom, at least, shall not be an inhabitant of the same state with themselves; they shall name in their ballots the person voted for as President, and in distinct ballots the person voted for as Vice-President, and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each, which lists they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the President of the Senate;—The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates and the votes shall then be counted;—The person having the greatest number of votes for President, shall be the President, if such number be a majority of the whole number of Electors appointed; and if no person have such majority, then from the persons having the highest numbers not exceeding three on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But in choosing the President, the votes shall be taken by states, the representation from each State having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the states, and a majority of all the states shall be necessary to a choice. And if the House of Representatives shall not choose a President whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President.—The person having the greatest number of votes as Vice-President, shall be the Vice-President, if such number be a majority of the whole number of Electors appointed, and if no person have a majority, then from the two highest numbers on the list, the Senate shall choose the Vice-President; a quorum for the purpose shall consist of two-thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

ARTICLE XIII

(The proposed amendment was sent to the states Feb. 1, 1865, by the Thirty-eighth Congress. It became effective Dec. 18, 1865.)

Section 1

Slavery prohibited.—Neither slavery nor

involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

Section 2

Congress given power to enforce this article.—Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV

(The proposed amendment was sent to the states June 16, 1866, by the Thirty-ninth Congress. It became effective July 28, 1868.)

Section 1

Citizenship defined; privileges of citizens.—All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

Section 2

Apportionment of Representatives.—Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the Executive and Judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male inhabitants of such State, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion, or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

Section 3

Disqualification for office; removal of disability.—No person shall be a Senator or Representative in Congress, or elector of President and Vice President, or hold any office, civil or military, under the United States, or under any State, who, having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall

* Amended by the 20th Amendment, Sections 3 and 4.

have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may by a vote of two-thirds of each House, remove such disability.

Section 4

Public debt not to be questioned; payment of debts and claims incurred in aid of rebellion forbidden.—The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations and claims shall be held illegal and void.

Section 5

Congress given power to enforce this article.—The Congress shall have power to enforce, by appropriate legislation, the provisions of this article.

ARTICLE XV

(The proposed amendment was sent to the states Feb. 27, 1869, by the Fortieth Congress. It became effective Mar. 30, 1870.)

Section 1

Right of certain citizens to vote established.—The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

Section 2

Congress given power to enforce this article.—The Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XVI

(The proposed amendment was sent to the states July 12, 1909, by the Sixty-first Congress. It became effective Feb. 25, 1913.)

Taxes on income; Congress given power to lay and collect.—The Congress shall have power to lay and collect taxes on incomes, from whatever source derived, without apportionment between the several States, and without regard to any census or enumeration.

ARTICLE XVII

(The proposed amendment was sent to the states May 16, 1912, by the Sixty-second Congress. It became effective May 31, 1913.)

Election of United States Senators; filling of vacancies; qualifications of electors.

1. The Senate of the United States shall be composed of two Senators from each State^{*} elected by the people thereof, for

six years; and each Senator shall have one vote. The electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State legislatures.

2. When vacancies happen in the representation of any State in the Senate, the executive authority of such State shall issue writs of election to fill such vacancies: *Provided*, That the legislature of any State may empower the executive thereof to make temporary appointment until the people fill the vacancies by election as the legislature may direct.

3. This amendment shall not be so construed as to affect the election or term of any Senator chosen before it becomes valid as part of the Constitution.

ARTICLE XVIII *

(The proposed amendment was sent to the states Dec. 18, 1917, by the Sixty-fifth Congress. It was approved by three-quarters of the states by Jan. 16, 1919, and became effective Jan. 16, 1920.)

Manufacture, sale or transportation of intoxicating liquors, for beverage purposes, prohibited.—1. After one year from the ratification of this article the manufacture, sale, or transportation of intoxicating liquors within, the importation thereof into, or the exportation thereof from the United States and all territory subject to the jurisdiction thereof for beverage purposes is hereby prohibited.

Congress and the several States given concurrent power to pass appropriate legislation to enforce this article.—2. The Congress and the several States shall have concurrent power to enforce this article by appropriate legislation.

Provisions of article to become operative, when adopted by three-fourths of the States.—3. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of the several States, as provided in the Constitution, within seven years from the date of the submission hereof to the States by Congress.

ARTICLE XIX

(The proposed amendment was sent to the states June 4, 1919, by the Sixty-sixth Congress. It became effective Aug. 26, 1920.)

The right of citizens to vote shall not be denied because of sex.—The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any States on account of sex.

Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XX

(The proposed amendment, sometimes called the "Lame Duck Amendment," was sent to the states Mar. 3, 1932, by the Seventy-second Congress. It became effective Feb. 6, 1933; but, in accordance with Section 5, Sections 1 and 2 did not go into effect until Oct. 15, 1933.)

* Repealed by the 21st Amendment.

Section 1

Terms of President, Vice-President, Senators and Representatives.—The terms of the President and Vice-President shall end at noon on the twentieth day of January, and the terms of Senators and Representatives at noon on the third day of January, of the years in which such terms would have ended if this article had not been ratified; and the terms of their successors shall then begin.

Section 2

Time of assembling Congress.—The Congress shall assemble at least once in every year, and such meeting shall begin at noon on the third day of January, unless they shall by law appoint a different day.

Section 3

Filling vacancy in office of President.—If, at the time fixed for the beginning of the term of the President, the President-elect shall have died, the Vice-President-elect shall become President. If a President shall not have been chosen before the time fixed for the beginning of his term, or if the President-elect shall have failed to qualify, then the Vice-President-elect shall act as President until a President shall have qualified; and the Congress may by law provide for the case wherein neither a President-elect nor a Vice-President-elect shall have qualified, declaring who shall then act as President, or the manner in which one who is to act shall be selected, and such person shall act accordingly until a President or Vice-President shall have qualified.

Section 4

Power of Congress in Presidential succession.—The Congress may by law provide for the case of the death of any of the persons from whom the House of Representatives may choose a President whenever the right of choice shall have devolved upon them, and for the case of the death of any of the persons from whom the Senate may choose a Vice-President whenever the right of choice shall have devolved upon them.

Section 5

Time of taking effect.—Sections 1 and 2 shall take effect on the 15th day of October following the ratification of this article.

Section 6

Ratification.—This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of three-fourths of the

several States within seven years from the date of its submission.

ARTICLE XXI

(The proposed amendment was sent to the states Feb. 20, 1933, by the Seventy-second Congress. It became effective Dec. 5, 1933.)

Section 1

Repeal of Prohibition Amendment.—The eighteenth article of amendment to the Constitution of the United States is hereby repealed.

Section 2

Transportation of intoxicating liquors.—The transportation or importation into any State, Territory, or possession of the United States for delivery or use therein of intoxicating liquors, in violation of the laws thereof, is hereby prohibited.

Section 3

Ratification.—This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by convention in the several States, as provided in the Constitution, within seven years from the date of the submission thereof to the States by the Congress.

ARTICLE XXII

(The proposed amendment was sent to the states Mar. 21, 1947, by the Eightieth Congress. It became effective Feb. 26, 1951.)

Section 1

Limit to number of terms a President may serve.—No person shall be elected to the office of the President more than twice, and no person who has held the office of President, or acted as President, for more than two years of a term to which some other person was elected President shall be elected to the office of the President more than once. But this Article shall not apply to any person holding the office of President when this Article was proposed by the Congress, and shall not prevent any person who may be holding the office of President, or acting as President, during the term within which this Article becomes operative from holding the office of President or acting as President during the remainder of such term.

Section 2

Ratification.—This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the legislatures of three-fourths of the several States within seven years from the date of its submission to the States by the Congress.

Lincoln's Gettysburg Address

The Battle of Gettysburg, one of the most noted battles of the Civil War, was fought on July 1, 2, and 3, 1863. On November 19, 1863, the field was dedicated as a national cemetery by President Lincoln in a two-minute speech that was to become immortal. At the time of its de-

livery the speech was relegated to the inside pages of the papers, while a two-hour address by Edward Everett, the leading orator of the time, caught the headlines.

The following is the text of the address revised by President Lincoln from his own notes:

FOURSCORE and seven years ago our fathers brought forth on this continent a new nation conceived in liberty and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this. But, in a larger sense, we cannot dedicate, we cannot consecrate, we cannot hallow this ground. The brave men, living and dead, who struggled here have consecrated it far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us the living rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion—that we here highly resolve that these dead shall not have died in vain, that this nation under God shall have a new birth of freedom, and that government of the people, by the people, for the people shall not perish from the earth.

The Monroe Doctrine

The Monroe Doctrine was announced in President James Monroe's message to Congress, during his second term on December 2, 1823 in part as follows:

"In the discussions to which this interest has given rise, and in the arrangements by which they may terminate, the occasion has been deemed proper for asserting as a principle in which rights and interests of the United States are involved, that the American continents, by the free and independent condition which they have assumed and maintain, are henceforth not to be considered as subjects for future colonization by any European power. . . . We owe it, therefore, to candor and to the amicable relations existing between the United States and those powers to declare that we should consider any attempt on their part to extend their system to any portion of this hemisphere as dangerous to our peace and safety. With the existing colonies or dependencies of any European power we have not interfered and shall not interfere. But with the governments who have declared their independence and maintain it, and whose independence we have, on great consideration, and on just principles, acknowledged, we could not view any interposition for the purpose of oppressing them or controlling in any other manner their destiny by any European power in any other light than as the manifestation of an unfriendly disposition toward the United States."

Minority Presidents

Thirteen candidates have become President of the U. S. with a popular vote less than 50 per cent of the total vote cast. It should be noted, however, that in elections before 1872, presidential electors were not chosen by popular vote in all states. Adams' election in 1824 was by the House of Representatives, which chose him over Jackson, who had a plurality of both electoral and popular votes, but not a majority in the electoral college.

Besides Jackson in 1824, only two other candidates receiving the largest popular vote have failed to gain a majority in the electoral college—Samuel J. Tilden (D) in 1876 and Grover Cleveland (D) in 1888.

The "minority" Presidents follow:

Year	President	Elec- toral	Popular vote
		Pct.	Pct.
1824	John Q. Adams.....	31.8	29.8
1844	James K. Polk (D).....	61.8	49.3
1848	Zachary Taylor (W).....	56.2	47.3
1856	James Buchanan (D).....	58.7	45.3
1860	Abraham Lincoln (R).....	59.4	39.9
1876	Rutherford B. Hayes (R).....	50.1	47.9
1880	James A. Garfield (R).....	57.9	48.3
1884	Grover Cleveland (D).....	54.6	48.8
1888	Benjamin Harrison (R).....	58.1	47.8
1892	Grover Cleveland (D).....	62.4	46.0
1912	Woodrow Wilson (D).....	81.9	41.8
1916	Woodrow Wilson (D).....	52.1	49.3
1948	Harry S. Truman (D).....	57.1	49.5

The Mayflower Compact

On September 6, 1620, the *Mayflower*, a sailing vessel of about 180 tons, started her memorable voyage from Plymouth, England with about 100* pilgrims aboard, bound for Virginia to establish a private permanent colony in North America. Arriving at Provincetown, Mass., on November 11 (November 21, new style calendar),

forty-one of the passengers signed the famous "Mayflower Compact" as the boat lay at anchor in that Cape Cod harbor. A small detail of the pilgrims, led by William Bradford, assigned to select a place for permanent settlement landed at what is now Plymouth, Mass., on December 21, N.S.

The text of the compact follows:

IN THE NAME OF GOD, Amen. We, whose names are underwritten, the Loyal Subjects of our dread Sovereign Lord, King James, by the Grace of God, of Great Britain, France and Ireland, King, Defender of the Faith, &

Having undertaken for the Glory of God, and Advancement of the Christian Faith, and the Honour of our King and Country, a voyage to plant the first colony in the northern Parts of Virginia; do by these Presents, solemnly and mutually in the Presence of God and one of another, covenant and combine ourselves together into a civil Body Politick, for our better Ordering and Preservation, and Furtherance of the Ends aforesaid; And by Virtue hereof to enact, constitute, and frame, such just and equal Laws, Ordinances, Acts, Constitutions and Offices, from time to time, as shall be thought most meet and convenient for the General good of the Colony; unto which we promise all due Submission and Obedience.

In WITNESS whereof we have hereunto subscribed our names at Cape Cod the eleventh of November, in the Reign of our Sovereign Lord, King James of England, France and Ireland, the eighteenth, and of Scotland the fifty-fourth. Anno Domini, 1620

John Carver
Digery Priest
William Brewster
Edmund Margesson
John Alden
George Soule
James Chilton
Francis Cooke
Joses Fletcher
John Ridgate
Christopher Martin

William Mullins
Thomas English
John Howland
Stephen Hopkins
Edward Winslow
Gilbert Winslow
Miles Standish
Richard Bitteridge
Francis Eaton
John Tilly
John Billington

Thomas Tinker
Samuel Fuller
Richard Clark
John Allerton
Richard Warren
Edward Liester
William Bradford
Thomas Williams
Isaac Allerton
Peter Brown
John Turner

Edward Tilly
John Craxton
Thomas Rogers
John Goodman
Edward Fuller
Richard Gardiner
William White
Edward Doten

* Historians differ as to whether 100, 101, or 102 passengers were aboard.

The Early Congresses

At the urging of Massachusetts and Virginia, the First Continental Congress met in Philadelphia on September 5, 1774, and was attended by representatives of all the colonies except Georgia. Patrick Henry of Virginia declared: "The distinctions between Pennsylvanians, New Yorkers and New Englanders are no more. I am not a Virginian but an American." This Congress, which adjourned October 26, 1774, passed intercolonial resolutions calling for extensive boycott by the colonies against British trade.

The following year, most of the delegates from the colonies were chosen by popular election to attend the Second Continental Congress, which assembled in Philadelphia on May 10. As war had already begun between the colonies and England, the chief problems before the Congress were the procuring of military supplies, the establishment of an army and proper defenses, the issuing of continental bills of credit, etc. On June 15, 1775, George Washington

was elected to command the Continental army. Congress adjourned Dec. 12, 1776.

Other Continental Congresses were held in Baltimore (1776-77), Philadelphia (1777), Lancaster, Pa. (1777), York, Pa. (1777-78) and Philadelphia (1778-81).

In 1781, the Articles of Confederation, although establishing a league of the thirteen states rather than a strong central government, provided for the continuance of Congress. Known thereafter as the Congress of the Confederation, it held sessions in Philadelphia (1781-83), Princeton, N. J. (1783), Annapolis, Md. (1783-84) and Trenton, N. J. (1784). Five sessions were held in New York City between the years 1785 and 1789.

The Congress of the United States, established by the ratification of the Constitution, held its first meeting on Mar. 4, 1789, in New York City. Several sessions of Congress were held in Philadelphia, and the first meeting in Washington, D. C., was on Nov. 17, 1800.

Presidents of the Continental Congresses

Name	Elected	Born	Died
Peyton Randolph, Va.	Sept. 5, 1774	c.1721	1775
Henry Middleton, S. C.	Oct. 22, 1774	1717	1784
Peyton Randolph, Va.	May 10, 1775	c.1721	1775
John Hancock, Mass.	May 24, 1775	1737	1793
Henry Laurens, S. C.	Nov. 1, 1777	1724	1792
John Jay, N. Y.	Dec. 10, 1778	1745	1829
Samuel Huntington, Conn.	Sept. 28, 1779	1731	1796
Thomas McKean, Del.	July 10, 1781	1734	1817
John Hanson, Md.	Nov. 5, 1781	1715	1783
Elias Boudinot, N. J.	Nov. 4, 1782	1740	1821
Thomas Mifflin, Pa.	Nov. 3, 1783	1744	1800
Richard Henry Lee, Va.	Nov. 30, 1784	1732	1794
John Hancock, Mass.*	Nov. 23, 1785	1737	1793
Nathaniel Gorham, Mass.	June 6, 1786	1738	1796
Arthur St. Clair, Pa.	Feb. 2, 1787	1734	1818
Cyrus Griffin, Va.	Jan. 22, 1788	1748	1810

* Resigned May 29, 1786, never having served, because of continued illness.

The Star-Spangled Banner

Francis Scott Key, 1814

O say, can you see, by the dawn's early light,
 What so proudly we hail'd at the twilight's last gleaming?
 Whose broad stripes and bright stars, thro' the perilous fight,
 O'er the ramparts we watch'd, were so gallantly streaming?
 And the rockets' red glare, the bombs bursting in air,
 Gave proof thro' the night that our flag was still there.
 O say, does that star-spangled banner yet wave
 O'er the land of the free and the home of the brave?

On the shore dimly seen thro' the mists of the deep,
 Where the foe's haughty host in dread silence reposes,
 What is that which the breeze, o'er the towering steep,
 As it fitfully blows, half conceals, half discloses?
 Now it catches the gleam of the morning's first beam,
 In full glory reflected, now shines on the stream:
 'T is the star-spangled banner: O, long may it wave
 O'er the land of the free and the home of the brave!

And where is that band who so vauntingly swore
 That the havoc of war and the battle's confusion,
 A home and a country should leave us no more?
 Their blood has wash'd out their foul footsteps' pollution.
 No refuge could save the hireling and slave
 From the terror of flight or the gloom of the grave:
 And the star-spangled banner in triumph doth wave
 O'er the land of the free and the home of the brave.

O thus be it ever when free-men shall stand
 Between their lov'd home and the war's desolation;
 Blest with vict'ry and peace, may the heav'n-rescued land
 Praise the Pow'r that hath made and preserv'd us a nation!
 Then conquer we must, when our cause it is just,
 And this be our motto: "In God is our trust!"
 And the star-spangled banner in triumph shall wave
 O'er the land of the free and the home of the brave!

ON SEPTEMBER 13, 1814, Francis Scott Key visited the British fleet in Chesapeake Bay to secure the release of Dr. William Beanes, who had been captured after the burning of Washington, D. C. The release was secured, but Key was detained on ship overnight during the shelling of Fort McHenry, one of the forts defending Baltimore. In the morning, he was so delighted to see the American flag still flying over the fort that he began a poem to commemorate the occasion. Entitled "The Star-Spangled Banner," the poem soon attained wide popularity as sung to the tune "Anacreon in Heaven." The origin of this tune is obscure, but it may have been written by John Stafford Smith, a British composer born in 1750. "The Star-Spangled Banner" was officially made the National Anthem by Congress in 1931, although already adopted as such by the Army and Navy.

History of the Flag

Source: *Encyclopaedia Britannica.*

THE FIRST OFFICIAL AMERICAN flag, the Continental or Grand Union flag, was displayed on Prospect Hill, Jan. 1, 1776, in the American lines besieging Boston. It had thirteen alternate red and white stripes, with the British Union Jack in the upper left corner.

On June 14, 1777, the Continental Congress adopted the design for a new flag, which actually was the Continental flag with the red cross of St. George and the white cross of St. Andrew replaced on the blue field by thirteen stars, one for each state. No rule was made as to the arrangement of the stars, and while they were usually shown in a circle, there were various other designs. It is uncertain when the new flag was first flown, but its first official announcement is believed to have been on Sept. 3, 1777.

The first public assertion that Betsy Ross made the first Stars and Stripes appeared in a paper read before the Historical Society of Pennsylvania on March 14, 1870, by William J. Canby, a grandson. However, Mr. Canby on later investigation found no official documents of any action by Congress on the flag before June 14, 1777. Betsy Ross' own story, according to her daughter, was that Washington, Robert Morris and George Ross, as representatives of Congress, visited her in Philadelphia in June 1776, showing her a rough draft of the flag and asking her if she could make one. However, the only actual record of the manufacture of flags by Betsy Ross is a voucher in Harrisburg, Pa., for 14 pounds

and some shillings for flags for the Pennsylvania navy.

On Jan. 13, 1794, Congress voted to add two stars and two stripes to the flag in recognition of the admission of Vermont and Kentucky to the Union. By 1818, there were twenty states in the Union, and as it was obvious that the flag would soon become unwieldy, Congress voted April 18 to return to the original thirteen stripes and to indicate the admission of a new state simply by the addition of a star the following July 4. The last two stars were added July 4, 1912, for New Mexico and Arizona.

The first Confederate flag, adopted in 1861 by the Confederate convention in Montgomery, Ala., was called the Stars and Bars; but because of its similarity in colors to the American flag, there was much confusion in the Battle of Bull Run. To remedy this situation, Gen. G. T. Beauregard suggested a battle flag, which was used by the Southern armies throughout the war. The flag consisted of a red field on which was placed a blue cross of St. Andrew separated from the field by a white fillet and adorned with thirteen* white stars for the Confederate states. In May 1863, at Richmond, an official flag was adopted by the Confederate Congress. This flag was white and twice as long as wide; the union, two-thirds the width of the flag, contained the battle flag designed for Gen. Beauregard. A broad transverse stripe of red was added Feb. 4, 1865, so that the flag might not be mistaken for a signal of truce.

* 11 states formally seceded, and unofficial groups in Kentucky and Missouri adopted ordinances of secession. On this basis, these two states were admitted to the Confederacy, although the official state governments remained in the Union.

Flag Etiquette

(Public Law 829—77th Congress)

JOINT RESOLUTION

To amend Public Law Numbered 623, approved June 22, 1942, entitled "Joint resolution to codify and emphasize existing rules and customs pertaining to the display and use of the flag of the United States of America."

Resolved by the Senate and House of Representatives of the United States of America in Congress Assembled, That Public Law Numbered 623, approved June 22, 1942, entitled "Joint resolution to codify and emphasize existing rules and customs pertaining to the display and use of the flag of the United States of America," be, and the same is hereby amended to read as follows:

That the following codification of existing rules and customs pertaining to the display and use of the flag of the United States of America be, and it is hereby established for the use of such civilians or civilian groups or organizations as may

not be required to conform with regulations promulgated by one or more executive departments of the Government of the United States.

SEC. 2. (a) It is the universal custom to display the flag only from sunrise to sunset on buildings and on stationary flag-staffs in the open. However, the flag may be displayed at night upon special occasions when it is desired to produce a patriotic effect.

(b) The flag should be hoisted briskly and lowered ceremoniously.

(c) The flag should not be displayed on days when the weather is inclement.

(d) The flag should be displayed on all days when the weather permits, especially on New Year's Day, January 1; Inauguration Day, January 20; Lincoln's Birthday, February 12; Washington's Birthday, Feb-

ruary 22; Army Day*, April 6; Easter Sunday (variable); Mother's Day, second Sunday in May; Memorial Day (half-staff until noon), May 30; Flag Day, June 14; Independence Day, July 4; Labor Day, first Monday in September; Constitution Day, September 17; Columbus Day, October 12; Navy Day*, October 27; Armistice Day, November 11†; Thanksgiving Day, fourth Thursday in November; Christmas Day, December 25; such other days as may be proclaimed by the President of the United States; the birthdays of States (dates of admission); and on State holidays.

(e) The flag should be displayed daily, weather permitting, on or near the main administration building of every public institution.

(f) The flag should be displayed in or near every polling place on election days.

(g) The flag should be displayed during school days in or near every schoolhouse.

Sec. 3. That the flag, when carried in a procession with another flag or flags, should be either on the marching right; that is, the flag's own right, or, if there is a line of other flags, in front of the center of that line.

(a) The flag should not be displayed on a float in a parade except from a staff, or as provided in subsection (i).

(b) The flag should not be draped over the hood, top, sides, or back of a vehicle or of a railroad train or a boat. When the flag is displayed on a motorcar, the staff shall be fixed firmly to the chassis or clamped to the radiator cap.

(c) No other flag or pennant should be placed above or, if on the same level, to the right of the flag of the United States of America, except during church services conducted by naval chaplains at sea, when the church pennant may be flown above the flag during church services for the personnel of the Navy.

(d) The flag of the United States of America, when it is displayed with another flag against a wall from crossed staffs, should be on the right, the flag's own right, and its staff should be in front of the staff of the other flag.

(e) The flag of the United States of America should be at the center and at the highest point of the group when a number of flags of States or localities or pennants of societies are grouped and displayed from staffs.

(f) When flags of States, cities, or localities, or pennants of societies are flown on the same halyard with the flag of the United States, the latter should always be at the peak. When the flags are flown from adjacent staffs, the flag of the United States should be hoisted first and lowered last. No such flag or pennant may be placed

above the flag of the United States or to the right of the flag of the United States.

(g) When flags of two or more nations are displayed, they are to be flown from separate staffs of the same height. The flags should be of approximately equal size. International usage forbids the display of the flag of one nation above that of another nation in time of peace.

(h) When the flag of the United States is displayed from a staff projecting horizontally or at an angle from the window sill, balcony, or front of a building, the union of the flag should be placed at the peak of the staff unless the flag is at half-staff. When the flag is suspended over a sidewalk from a rope extending from a house to a pole at the edge of the sidewalk, the flag should be hoisted out, union first, from the building.

(i) When the flag is displayed otherwise than by being flown from a staff, it should be displayed flat, whether indoors or out, or so suspended that its folds fall as free as though the flag were staffed.

(j) When the flag is displayed over the middle of the street, it should be suspended vertically with the union to the north in an east and west street or to the east in a north and south street.

(k) When used on a speaker's platform, the flag, if displayed flat, should be displayed above and behind the speaker. When displayed from a staff in a church or public auditorium, if it is displayed in the chancel of a church, or on the speaker's platform in a public auditorium, the flag should occupy the position of honor and be placed at the clergyman's or speaker's right as he faces the congregation or audience. Any other flag so displayed in the chancel or on the platform should be placed at the clergyman's or speaker's left as he faces the congregation or audience. But when the flag is displayed from a staff in a church or public auditorium elsewhere than in the chancel or on the platform it shall be placed in the position of honor at the right of the congregation or audience as they face the chancel or platform. Any other flag so displayed should be placed on the left of the congregation or audience as they face the chancel or platform.

(l) The flag should form a distinctive feature of the ceremony of unveiling a statue or monument, but it should never be used as the covering for the statue or monument.

(m) The flag, when flown at half-staff, should be first hoisted to the peak for an instant and then lowered to the half-staff position. The flag should be again raised to the peak before it is lowered for the day. By "half-staff" is meant lowering the flag to one-half the distance between the top and bottom of the staff. Crepe streamers may be affixed to spearheads or flag-staffs in a parade only by order of the President of the United States.

* In 1949, Army Day and Navy Day were abandoned; Armed Forces Day is celebrated the 3rd Saturday of May. † In 1954, changed to Veterans Day.

(n) When the flag is used to cover a casket, it should be so placed that the union is at the head and over the left shoulder. The flag should not be lowered into the grave or allowed to touch the ground.

SEC. 4. That no disrespect should be shown to the flag of the United States of America, the flag should not be dipped to any person or thing. Regimental colors, State flags, and organization or institutional flags are to be dipped as a mark of honor.

(a) The flag should never be displayed with the union down save as a signal of dire distress.

(b) The flag should never touch anything beneath it, such as the ground, the floor, water, or merchandise.

(c) The flag should never be carried flat or horizontally, but always aloft and free.

(d) The flag should never be used as drapery of any sort whatsoever, never festooned, drawn back, nor up, in folds, but always allowed to fall free. Bunting of blue, white, and red, always arranged with the blue above, the white in the middle, and the red below, should be used for covering a speaker's desk, draping the front of a platform, and for decoration in general.

(e) The flag should never be fastened, displayed, used, or stored in such a manner as will permit it to be easily torn, soiled, or damaged in any way.

(f) The flag should never be used as a covering for a ceiling.

(g) The flag should never have placed upon it, nor on any part of it, nor attached to it any mark, insignia, letter, word, figure, design, picture, or drawing of any nature.

(h) The flag should never be used as a receptacle for receiving, holding, carrying, or delivering anything.

(i) The flag should never be used for advertising purposes in any manner whatsoever. It should not be embroidered on such articles as cushions or handkerchiefs and the like, printed or otherwise impressed on paper napkins or boxes or anything that is designed for temporary use and discard; or used as any portion of a costume or athletic uniform. Advertising signs should not be fastened to a staff or halyard from which the flag is flown.

(j) The flag, when it is in such condition that it is no longer a fitting emblem for display, should be destroyed in a dignified way, preferably by burning.

SEC. 5. That during the ceremony of hoisting or lowering the flag or when the flag is passing in a parade or in a review, all persons present should face the flag,

stand at attention, and salute. Those present in uniform should render the military salute. When not in uniform, men should remove the headdress with the right hand holding it at the left shoulder, the hand being over the heart. Men without hats should salute in the same manner. Aliens should stand at attention. Women should salute by placing the right hand over the heart. The salute to the flag in the moving column should be rendered at the moment the flag passes.

SEC. 6. That when the national anthem is played and the flag is not displayed, all present should stand and face toward the music. Those in uniform should salute at the first note of the anthem, retaining this position until the last note. All others should stand at attention, men removing the headdress. When the flag is displayed, all present should face the flag and salute.

SEC. 7. That the pledge of allegiance to the flag, "I pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one Nation under God,[†] indivisible, with liberty and justice for all," be rendered by standing with the right hand over the heart. However, civilians will always show full respect to the flag when the pledge is given by merely standing at attention, men removing the headdress. Persons in uniform shall render the military salute.

SEC. 8. Any rule or custom pertaining to the display of the flag of the United States of America, set forth herein, may be altered, modified, or repealed, or additional rules with respect thereto may be prescribed, by the Commander-in-Chief of the Army and Navy of the United States, whenever he deems it to be appropriate or desirable; and any such alteration or additional rule shall be set forth in a proclamation.

Approved, December 22, 1942.

The American's Creed*

"I believe in the United States of America as a government of the people, by the people, for the people; whose just powers are derived from the consent of the governed; a democracy in a republic; a sovereign Nation of many sovereign States; a perfect union, one and inseparable; established upon those principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes.

"I therefore believe it is my duty to my country to love it; to support its Constitution; to obey its laws; to respect its flag, and to defend it against all enemies."

* William Tyler Page, Clerk of the U. S. H. use of Representatives, wrote "The American's Creed" in 1917. It was accepted by the House on behalf of the American people on April 3, 1918. † The idea originated in 1892 with James B. Upham, an editor of *Youth's Companion*. The claim that Upham was also the author is disputed by some who credit Francis Bellamy. ‡ The phrase "under God" was added to the pledge on June 14, 1954.

SCIENCE



MEASURES AND WEIGHTS

UNITS OF LENGTH

Metric System

The meter was originally intended to be one ten-millionth of the earth's quadrant, a quadrant being one-quarter of a circumference. However, because of the difficulty of determining such a length with accuracy, this definition was abandoned. The meter is now considered to be the distance at 0°C between two microscopic marks on the International Prototype Meter, a platinum-iridium bar, kept by the International Bureau of Weights and Measures at Sèvres, France, a suburb of Paris.

In 1927, the International Conference on Weights and Measures adopted a secondary definition of the meter in terms of light-waves. According to this definition, one meter is equivalent to 1,553,164.13 wave lengths of the red light from cadmium.

Unit	Comparison	English equivalent
Millimeter (mm)	.001 meter	.0394 inch
Centimeter (cm)	.01 meter	.3937 inch
Decimeter (dm)	.1 meter	3.937 inches
Meter (m)		3.2808 feet
Dekameter (dkm)	10 meters	32.8083 feet
Hectometer (hm)	100 meters	328.0833 feet
Kilometer (km)	1000 meters	.62137 mile

English System

According to legend, the yard was established by Henry I as the distance from the point of his nose to the end of his thumb when his arm was outstretched. The British Imperial Yard was defined in 1878 by the Weights and Measures Act as the distance at 62°F between two fine lines on gold studs sunk in a bronze bar known as the "No. 1 Standard Yard." This is equivalent to .914399 meter. In the United States, the yard is defined in terms of the meter, using as a standard the U. S. Prototype Meter. According to this definition, the yard is 3600/3937 (or .914402) meter, slightly longer than the British Imperial Yard.

Unit	Comparison	Metric equivalent
Inch (in.)		25.4001 millimeters
Foot (ft)	12 inches	.3048 meter
Yard (yd)	36 inches 3 feet	.9144 meter
Rod (rd)	16½ feet 5½ yards	5.0292 meters
Furlong (fur.)	660 feet 220 yards 40 rods	201.1684 meters
Mile (mi)*	5280 feet 1760 yards 320 rods 8 furlongs	1.6093 kilometers

* Known as statute mile. See nautical mile under Miscellaneous Units.

UNITS OF AREA

Metric System

Unit	Comparison	English equivalent
Square millimeter (mm²)	.000001 m²	.0015 sq in.
Square centimeter (cm²)	.0001 m²	.155 sq in.
Square decimeter (dm²)	.01 m²	15.5 sq in.
Square meter (m²)*		10.7639 sq ft
Square dekameter (dkm²)†	100 m²	3.9537 sq rd
Square hectometer (hm²)‡	10,000 m²	2.471 acres
Square kilometer (km²)	1,000,000 m²	.3861 sq mi

English System

Unit	Comparison	Metric equivalent
Square inch (sq in.)		6.4516 cm²
Square foot (sq ft)	144 sq in.	.0929 m²
Square yard (sq yd)	1296 sq in. 9 sq ft	.8361 m²
Square rod (sq rd)	272¼ sq ft 30¾ sq yds	25.293 m²
Acre	43,560 sq ft 4,840 sq yd 160 sq rd	.4047 ha
Square mile (sq mi)	27,878,400 sq ft 3,097,600 sq yd 102,400 sq rd 640 acres	2.5900 km²

* Also known as a centare (ca).

† Also known as an are (a).

‡ Also known as a hectare (ha).

UNITS OF VOLUME

Metric System

Unit	Comparison	English equivalent
Cubic millimeter (mm³)	.000000001 m³	.00006 cu in.
Cubic centimeter (cm³)	.000001 m³	.061 cu in.
Cubic decimeter (dm³)	.001 m³	61.0234 cu in.
Cubic meter (m³)*		35.3145 cu ft

* Also known as a stere (s).

English System

Unit	Comparison	Metric equivalent
Cubic inch (cu in.)		16.3872 cm³
Cubic foot (cu ft)	1728 cu in.	.0283 m³
Cubic yard (cu yd)	46,656 cu in. 27 cu ft	.7646 m³
Cord (cd)	128 cu ft	3.6246 m³

UNITS OF WEIGHT OR MASS

The term *mass* denotes the amount of matter contained in an object, while the term *weight* denotes the gravitational pull of the earth on the object. For practical purposes, the two terms are synonymous.

Metric System

The gram was originally intended to be equal to the mass of one cubic centimeter of pure water at 4°C. However, because of

the difficulty of making exact measurement, a small error was made; and it has since been found that a kilogram of pure water occupies 1.000028 cubic decimeters. The standard for the kilogram is a platinum-iridium cylinder, called the International Prototype Kilogram, which is kept at the International Bureau of Weights and Measures in France.

Unit	Comparison	Avdp.	English equivalents	
			Troy	Apoth.
Milligram (mg)	.001 gram	.0154 grain	.0154 grain	.0154 grain
Centigram (cg)	.01 gram	.1543 grain	.1543 grain	.1543 grain
Decigram (dg)	.1 gram	1.5432 grains	1.5432 grains	1.5432 grains
Gram (g)		.0353 ounce	.0322 ounce	.0322 ounce
Dekagram (dkg)	10 grams	.3527 ounce	.3215 ounce	.3215 ounce
Hectogram (hg)	100 grams	3.5274 ounces	3.2151 ounces	3.2151 ounces
Kilogram (kg)	1000 grams	2.2046 pounds	2.6792 pounds	2.6792 pounds
Metric ton (t)	1000 kg	1.1023 tons *		

* Short tons. A metric ton is equivalent to .9842 long ton.

English System

The English System is complicated by the existence of three different kinds of weight: *avoirdupois weight*, used for common purposes; *troy weight*, used for weighing gold, silver, etc.; and *apothecaries weight*, used for making up medical prescriptions.

The British Imperial Pound (avoirdupois) is defined as the mass of a pure plati-

num cylinder kept by the Standards Department of the Board of Trade. In the United States, the pound (avoirdupois) is defined in terms of the kilogram, using as a standard the U. S. Prototype Kilogram. According to this definition, the pound is equal to .4535924277 kilogram, making it infinitesimally smaller than the British Imperial Pound.

Avoirdupois Weight

Unit	Comparison	Metric equivalent
Grain		.0648 gram
Dram (dr avdp)	27.3438 grains	1.7718 grams
Ounce (oz avdp)	16 drams	28.3495 grams
	437.5 grains	
Pound (lb avdp)	7000 grains	4536 kilogram
	256 drams	
	16 ounces	
Hundredweight (cwt)*	100 pounds	45.3592 kilograms
Ton (tn)†	2000 pounds	.9072 metric ton

* Known as the short hundredweight, which is in use in the United States and Canada. Great Britain uses the long hundredweight (112 lb or 50.8024 kg).

† Known as the short ton, which is in use in the United States and Canada. Great Britain uses the long ton (2240 lb or 1.01605 metric tons).

Troy Weight

Unit	Comparison	Metric equivalent
Grain		.0648 gram
Pennyweight (dwt)	24 grains	1.5552 grams
Ounce (oz t)	480 grains	31.1035 grams
	20 pennyweights	
Pound (lb t)*	5760 grains	.3732 kilogram
	240 pennyweights	
	12 ounces	

* Declared illegal in Great Britain.

Apothecaries Weight

Unit	Comparison	Metric equivalent
Grain		.0648 gram
Scruple (s ap or ℥)	20 grains	1.296 grams
Dram (dr ap or ℥)	60 grains	3.8879 grams
	3 scruples	
Ounce (oz ap or ℥)	480 grains	31.1035 grams
	24 scruples	
	8 drams	
Pound (lb ap)	5760 grains	.3732 kilogram
	288 scruples	
	96 drams	
	12 ounces	

UNITS OF CAPACITY

Metric System

The liter is a secondary unit of capacity defined as the volume occupied by one kilogram of pure water at 4°C. It was intended that the liter should exactly equal one cubic decimeter, but as an error was made in measurement, has since been found to equal 1.000028 cubic decimeters.

Unit	Comparison	English equivalents	
		Liquid	Dry
Milliliter (ml)	.001 liter	.0338 fl oz	.0018 pt
Centiliter (cl)	.01 liter	.3381 fl oz	.0182 pt
Deciliter (dl)	.1 liter	3.3815 fl oz	.1816 pt
Liter (l)		1.0567 qt	.9081 qt
Dekaliter (dkl)	10 liters	2.6418 gal	1.1351 pk
Hectoliter (hl)	100 liters	26.4178 gal	2.8378 bu

English System

In Great Britain, the standard unit of capacity for measuring both liquid and dry commodities is the British Imperial Gallon. It is defined as the volume of ten pounds of pure water at 62°F and contains 277.418 cubic inches. The bushel is defined as eight gallons (2218.192 cubic inches).

In the United States, there are two separate standards. The unit for measuring liquids is the gallon, which is defined as 231 cubic inches; the unit for measuring dry commodities is the bushel, which is defined as 2150.42 cubic inches.

Liquid Measure (U. S.)

Unit	Comparison	Cubic inches	Metric equivalent
Minim (min or m)*		.0038	.0616 ml
Fluid dram (fl dr)	60 min	.2256	3.6966 ml
Fluid ounce (fl oz)	8 fl dr	1.8047	29.5729 ml
Gill (gi)	32 fl dr	7.2188	118.292 ml
	4 fl oz		
Pint (pt)	16 fl oz	28.875	.4732 liter
	4 gi		
Quart (qt)	32 fl oz	57.75	.9463 liter
	8 gi		
	2 pt		
Gallon (gal)	32 gi	231	3.7853 liters
	8 pt		
	4 qt		

* Approximately one drop.

UNITS OF CIRCULAR MEASURE

Unit	Comparison
Second (")	
Minute (')	60 seconds
Degree (°)	60 minutes
Right angle	90 degrees
Straight angle	180 degrees
Circle	360 degrees

Dry Measure (U. S.)

Unit	Comparison	Cubic inches	Metric equivalent
Pint (pt)		33.6003	.5506 liter
Quart (qt)	2 pints	67.2006	1.1012 liters
Peck (pk)	16 pints	537.605	8.8096 liters
	8 quarts		
Bushel (bu)	64 pints	2150.42	35.2383 liters
	32 quarts		
	4 pecks		

COMMON FORMULAS

Circumference

Circle: $C=\pi d$, in which π is 3.1416 and d the diameter.

Area

Triangle: $A=\frac{ab}{2}$, in which a is the base and b the height.

Square: $A=a^2$, in which a is one of the sides.

Rectangle: $A=ab$, in which a is the base and b the height.

Trapezoid: $A=\frac{h(a+b)}{2}$, in which h is the height, a the longer parallel side, and b the shorter.

Regular pentagon: $A=1.720a^2$, in which a is one of the sides.

Regular hexagon: $A=2.598a^2$, in which a is one of the sides.

Regular octagon: $A=4.828a^2$, in which a is one of the sides.

Circle: $A=\pi r^2$, in which π is 3.1416 and r the radius.

Volume

Cube: $V=a^3$, in which a is one of the edges.
Rectangular prism: $V=abc$, in which a is the length, b the width, and c the depth.

Pyramid: $V=\frac{Ah}{3}$, in which A is the area of the base and h the height.

Cylinder: $V=\pi r^2h$, in which π is 3.1416, r the radius of the base, and h the height.

Cone: $V=\frac{\pi r^2h}{3}$, in which π is 3.1416, r the radius of the base, and h the height.

Sphere: $V=\frac{4\pi r^3}{3}$, in which π is 3.1416 and r the radius.

Miscellaneous

Speed per second acquired by falling body: $v=32t$, in which t is the time in seconds.

Distance in feet traveled by falling body: $d=16t^2$, in which t is the time in seconds.

Speed of sound in feet per second through any given temperature of air:

$V=\frac{1087\sqrt{273+t}}{16.52}$, in which t is the temperature Centigrade.

Cost per hour of operation of electrical device: $C=\frac{Wtc}{1000}$, in which W is the number of watts, t the time in hours, and c the cost per kilowatt-hour.

Conversion of matter into energy (Einstein's Theorem): $E=mc^2$, in which E is the energy in ergs, m the mass of the matter in grams, and c the speed of light in centimeters per second. ($c^2=9\cdot10^{20}$).

Abbreviations

The National Bureau of Standards recommends that the period be omitted after all abbreviations of units unless the

abbreviation forms an English word, and that the same abbreviation be used for both singular and plural.

FAHRENHEIT AND CENTIGRADE SCALES

Zero on the Fahrenheit scale represents the temperature produced by the mixing of equal weights of snow and common salt.

Absolute zero is theoretically the lowest possible temperature, the point at which all molecular motion would cease.

	F	C	
Boiling point of water	212°	100°	To convert Fahrenheit to Centigrade, subtract 32 and multiply by 5/9.
Freezing point of water	32°	0°	
Absolute zero	-459.6°	-273.1°	To convert Centigrade to Fahrenheit, multiply by 9/5 and add 32.

ROMAN NUMERALS

Roman numerals are expressed by letters of the alphabet and are rarely used today except for formality or variety.

There are three basic principles for reading Roman numerals:

1. A letter repeated once or twice repeats its value that many times. (XXX=30, CC=200, etc.).
2. One or more letters placed after another letter of greater value increases the greater value by the amount of the smaller. (VI=6, LXX=70, MCC=1200, etc.).
3. A letter placed before another letter of greater value decreases the greater value by the amount of the smaller. (IV=4, XC=90, CM=900, etc.).

Letter	Value	Letter	Value
I	1	LX	60
II	2	LXX	70
III	3	LXXX	80
IV	4	XC	90
V	5	C	100
VI	6	D	500
VII	7	M	1,000
VIII	8	V̄	5,000
IX	9	X̄	10,000
X	10	L̄	50,000
XX	20	C̄	100,000
XXX	30	D̄	500,000
XL	40	M̄	1,000,000
L	50		

SIMPLE INTEREST FOR \$100

To find the interest for any amount of money, move the decimal point of that amount two places to the left and multiply by the figure obtained from the table.

For figuring simple interest, the year is considered to have 360 days.

	1 Day	7 Days	1 Month	3 Months	6 Months	1 Year
2%	\$.00556	\$.03889	\$.16667	\$.50000	\$1.00000	\$2.00000
2½%	.00694	.04861	.20833	.62500	1.25000	2.50000
3%	.00833	.05833	.25000	.75000	1.50000	3.00000
3½%	.00972	.06806	.29167	.87500	1.75000	3.50000
4%	.01111	.07778	.33333	1.00000	2.00000	4.00000
4½%	.01250	.08750	.37500	1.12500	2.25000	4.50000
5%	.01389	.09722	.41667	1.25000	2.50000	5.00000
5½%	.01528	.10694	.45833	1.37500	2.75000	5.50000
6%	.01667	.11667	.50000	1.50000	3.00000	6.00000
6½%	.01806	.12639	.54167	1.62500	3.25000	6.50000
7%	.01944	.13611	.58333	1.75000	3.50000	7.00000
8%	.02222	.15556	.66667	2.00000	4.00000	8.00000
9%	.02500	.17500	.75000	2.25000	4.50000	9.00000
10%	.02778	.19444	.83333	2.50000	5.00000	10.00000

MISCELLANEOUS UNITS

AGATE: Originally a measurement of type size (5½ points). Now equal to 1/14 inch. Used in printing for measuring column length.

ANGSTROM (A or λ): .0001 micron or .0000001 mm. Used for measuring length of light waves.

ASTRONOMICAL UNIT (A.U.): 93,003,000 miles, the average distance of the earth from the sun. Used in astronomy.

BALE: A large bundle of goods. In the U. S., the approximate weight of a bale of cotton is 500 pounds. The weight varies in other countries.

BARREL (bbl): For liquids, 31½ gallons or 7326.5 cubic inches. For dry commodities, except cranberries: 105 dry quarts or 7056 cubic inches. For cranberries: 5826 cubic inches.

BOARD FOOT (fbm): 144 cubic inches (12 in. x 12 in. x 1 in.). Used for lumber.

BOLT: 40 yards. Used for measuring cloth.

CABLE: About 100 fathoms or 600 feet. Used for measuring lengths of cable.

CARAT (c): 200 milligrams or 3.086 grains troy. Originally the weight of a seed of the carob tree in the Mediterranean region. Used for weighing precious stones. Also a measure of the purity of gold alloy, indicating how many parts out of 24 are pure. Eighteen carat gold, for example, is ¾ pure.

CHAIN (ch): a chain 66 feet or one-tenth of a furlong in length, divided into 100 parts called links. One mile is equal to 80 chains. Used in surveying and sometimes called Gunter's chain.

CUBIT: 18 inches or 45.72 cm. Derived from distance between elbow and tip of middle finger.

ELL, ENGLISH: 1¼ yards or 1/32 bolt. Used for measuring cloth.

FATHOM (fath): 6 feet or 1.8288 m. Derived from the distance to which a man can stretch his arms. Used for measuring cables and depths of water.

FREIGHT TON (also called MEASURE-MENT TON): 40 cubic feet of merchandise. Used for cargo freight.

GREAT GROSS: 12 gross or 1728.

GROSS: 12 dozen or 144.

HAND: 4 inches or 10.16 cm. Derived from the width of the hand. Used for measuring the height of horses at withers.

HOGSHEAD (hhd): 2 liquid barrels or 14.653 cubic inches.

HORSEPOWER: The power needed to lift 33,000 pounds a distance of one foot in one minute (about 1½ times the power an average horse can exert). Used for measuring the power of steam engines, etc.

KNOT: Not a distance, but the rate of speed of one nautical mile per hour. Used for measuring speed of ships.

LEAGUE: Rather indefinite and varying measure, but usually estimated at 3 miles in English-speaking countries.

LIGHT-YEAR: 5,880,000,000,000 miles, the distance light travels in a year at the rate of 186,272 miles per second. (If an astronomical unit were represented by one inch, a light-year would be represented by about one mile.) Used for measurements in interstellar space.

LINK: One-hundredth of a chain or 7.92 inches. Used in surveying.

MAGNUM: Two-quart bottle. Used for measuring wine, etc.

MICRON (μ): .001 millimeter. Used for scientific measurements.

MIL: .001 inch. Used for measuring size of wire. The area of a cross-section of wire is usually expressed in circular mils, a circular mil being the area of a circle one mil in diameter. A wire one inch in diameter has a cross-section area of one million circular mils.

MILLIMICRON (mμ): .001 micron or .000001 mm. Used for scientific measurements.

NAUTICAL MILE (also called GEOGRAPHICAL or SEA MILE): Equal to a minute or 1/21600 of a great circle of the earth. Length varies in different countries. In Great Britain, it is 6080 feet or 1853.2 meters, and in the United States, it is 6080.2 feet or 1853.248 meters. The International Hydrographic Bureau proposed in 1929 a length of 1852 meters or 6076.097 feet, which has been adopted by several countries.

PARSEC: Approximately 3.26 light-years or 19.2 trillion miles. Term is combination of first syllables of *parallax* and *second*, and distance is that of imaginary star when lines drawn from it to both earth and sun form a maximum angle or parallax of one second (1/3600 degree). Used for measuring interstellar distances.

PI (π): 3.14159265+. The ratio of the circumference of a circle to its diameter. For practical purpose, the value is used to four decimal places: 3.1416.

PICA: ½ inch or 12 points. Used in printing for measuring column width, etc.

PIPE: 2 hogsheads. Used for measuring wine and other liquids.

POINT: .013837 (approximately 1/72) inch or 1/12 pica. Used in printing for measuring type size.

QUINTAL: 100,000 grams or 220.46 pounds avoirdupois.

QUIRE: Used for measuring paper. Sometimes 24 sheets but more often 25. There are 20 quires in a ream.

REAM: Used for measuring paper. Sometimes 480 sheets, but more often 500 sheets.

SCORE: 20 units.

SPAN: 9 inches or 22.86 cm. Derived from the distance between the end of the thumb and the end of the little finger when both are outstretched.

STONE: Legally 14 pounds avoirdupois in Great Britain.

TOWNSHIP: U. S. land measurement of almost 36 square miles. The south border is 6 miles long. The east and west borders, also 6 miles long, follow the meridians, making the north border slightly less than six miles long. Used in surveying.

TUN: 252 gallons, but often larger. Used for measuring wine and other liquids

DECIMAL EQUIVALENTS OF COMMON FRACTIONS

$\frac{1}{2}$	.5000	$\frac{1}{32}$	.0313	$\frac{3}{11}$	.2727	$\frac{6}{11}$	.5455
$\frac{1}{4}$	.3333	$\frac{1}{164}$	.0156	$\frac{4}{5}$	.8000	$\frac{7}{8}$	.8750
$\frac{1}{8}$	.1250	$\frac{2}{73}$	.6667	$\frac{4}{7}$	.5714	$\frac{7}{9}$	.7778
$\frac{1}{4}$	.2500	$\frac{2}{73}$	.4000	$\frac{4}{9}$	.4444	$\frac{7}{10}$	.7000
$\frac{1}{5}$	.2000	$\frac{2}{7}$	.2857	$\frac{4}{11}$	.3636	$\frac{7}{11}$	.6364
$\frac{1}{6}$	.1667	$\frac{2}{9}$	.2222	$\frac{5}{6}$	.8333	$\frac{7}{12}$	.5833
$\frac{1}{7}$	.1429	$\frac{2}{11}$	.1818	$\frac{5}{7}$	.7143	$\frac{8}{9}$	.8889
$\frac{1}{8}$	.1250	$\frac{3}{4}$	.7500	$\frac{5}{8}$	.6250	$\frac{8}{11}$	.7273
$\frac{1}{9}$	.1111	$\frac{3}{5}$	.6000	$\frac{5}{9}$	.5556	$\frac{9}{10}$	.9000
$\frac{1}{10}$	.1000	$\frac{3}{7}$	.4286	$\frac{5}{11}$	.4545	$\frac{9}{11}$	.8182
$\frac{1}{11}$	.0909	$\frac{3}{8}$	.3750	$\frac{5}{12}$	.4167	$\frac{10}{11}$	.9091
$\frac{1}{12}$	.0833	$\frac{3}{10}$	.3000	$\frac{6}{7}$	.8571	$\frac{11}{12}$	.9167
$\frac{1}{16}$	.0625						

Handy Conversion Factors

To change	To	Multi- ply by
acres	hectares	.4047
bushels (U. S.)	hectoliters	.3524
centimeters	inches	.3937
cubic feet	cubic meters	.0283
cubic meters	cubic feet	35.3145
cubic meters	cubic yards	1.3079
cubic yards	cubic meters	.7646
feet	meters	.3048
gallons (U. S.)	liters	3.7853
grains	grams	.0648
grams	grains	15.4324
grams	ounces avdp.	.0353
hectares	acres	2.4710
hectoliters	bushels (U. S.)	2.8378
inches	millimeters	25.4001
inches	centimeters	2.5400
kilograms	pounds ap or t	2.6792
kilograms	pounds avdp.	2.2046
kilometers	miles	.6214
liters	gallons (U. S.)	.2642
liters	pecks	.1135
liters	pints (dry)	1.8162
liters	pints (liquid)	2.1134
liters	quarts (dry)	.9081
liters	quarts (liquid)	1.0567
meters	feet	3.2808
meters	yards	1.0936
metric tons	tons (long)	.9842
metric tons	tons (short)	1.1023
miles	kilometers	1.6093
millimeters	inches	.0394
ounces avdp.	grams	28.3495
pecks	liters	8.8096
pints (dry)	liters	.5506
pints (liquid)	liters	.4732
pounds ap or t	kilograms	.3732
pounds avdp.	kilograms	.4536
quarts (dry)	liters	1.1012
quarts (liquid)	liters	.9463
square feet	square meters	.0929
square meters	square feet	10.7639
square meters	square yards	1.1960
square yards	square meters	.8361
tons (long)	metric tons	1.0160
tons (short)	metric tons	.9072
yards	meters	.9144

Perfect Squares and Cubes, 1 to 2025

Number	Square root	Cube root	Number	Square root	Cube root
1	1	1	512	22	8
4	2	..	529	23	..
8	..	2	576	24	..
9	3	..	625	25	..
16	4	..	676	26	..
25	5	..	729	27	9
27	..	3	784	28	..
36	6	..	841	29	..
49	7	..	900	30	..
64	8	4	961	31	..
81	9	..	1000	32	10
100	10	..	1024	32	..
121	11	..	1089	33	..
125	..	5	1156	34	..
144	12	..	1225	35	..
169	13	..	1296	36	..
196	14	..	1331	..	11
216	..	6	1369	37	..
225	15	..	1444	38	..
256	16	..	1521	39	..
289	17	..	1600	40	..
324	18	..	1681	41	..
343	..	7	1728	..	12
361	19	..	1764	42	..
400	20	..	1849	43	..
441	21	..	1936	44	..
484	22	..	2025	45	..

Mean and Median

The mean, also called the average, of a series of quantities is obtained by finding the sum of the quantities and dividing it by the number of quantities. In the series 1,3,5,18,19,20,25, the mean or average is 13 —i.e., 91 divided by 7.

The median of a series is that point which so divides it that half the quantities are on one side, half on the other. In the above series, the median is 18.

The median often better expresses the common-run, since it is not, as is the mean, affected by an excessively high or low figure. In the series 1,3,4,7,55, the median of 4 is a truer expression of the common-run than is the mean of 14.

Calories and Vitamins of Selected Foods

Source: U. S. Dept. of Agriculture, Agriculture Handbook No. 8 (June 1950).

Food and (amount) ¹	Energy, calories	Vitamin A value, Int. Units	Thiamine, mg.	Riboflavin, mg.	Niacin, mg.	Ascorbic acid, mg.
Apples (1 medium R).....	76	120	.05	.04	.2	6
Bacon: medium fat (2 sl. C).....	97	(0)	.08	.05	.8	0
Bananas (1 medium R).....	88	430	.04	.05	.7	10
Beans: snap, green (1 cup C ²).....	27	830	.09	.12	.6	18
Beef: sirloin ³ (3 oz. C).....	257	30	.06	.16	4.1	0
Beets: red, diced (1 cup C).....	68	30	.03	.07	.5	11
Bread: rye (1 sl.).....	57	0	.04	.02	.4	(0)
Bread: white, enriched ⁴ (1 sl.).....	63	0	.06	.04	.5	(0)
Bread: wholewheat (1 sl.).....	55	0	.07	.03	.7	(0)
Butter (1 tbs.).....	100	460 ⁵	...	...	...	(0)
Buttermilk: cultured ⁶ (1 cup).....	86	10	.09	.43	.3	3
Cabbage (1 cup R).....	24	80	.06	.05	.3	50
Carrots: diced (1 cup C).....	44	18,130	.07	.07	.7	6
Cheese: Swiss (1 oz.).....	105	410	trace	(.11)	(trace)	(0)
Cheese: cottage ⁶ (1 cup).....	215	(50)	.04	.69	(.2)	(0)
Chicken: roasters ⁷ (4 oz. R).....	227	460	.09	.18	9.1	(0)
Chocolate: unsweetened (1 oz.).....	143	20	.01	.06	.3	(0)
Corn (1 ear C).....	84	390 ⁸	.11	.10	1.4	8
Crackers: graham (2 medium).....	55	(0)	.04	.02	.2	(0)
Cream: light (½ pt.).....	489	1,980	.07	.34	.2	3
Eggs: poached (1).....	77	540	.04	.12	trace	0
Flour: wheat, enriched ⁹ (1 cup).....	401	(0)	.48	.29	3.8	(0)
Grapefruit (½ medium).....	75	20	.07	.04	.4	76
Ham: smoked ³ (3 oz. C).....	339	(0)	.46	.18	3.5	0
Hamburger (3 oz. C).....	316	40	.07	.16	4.1	0
Honey (1 tbs.).....	62	(0)	trace	.01	trace	1
Ice cream (1/7 qt. brick).....	167	420	.03	.15	.1	1
Lamb: leg roast ³ (3 oz. C).....	230	...	.12	.21	4.4	0
Lemons (1 medium).....	20	0	.03	trace	.1	31
Liver: calf (3 oz. R).....	120	19,130	.18	2.65	13.7	30
Macaroni: enriched (1 cup C).....	209	(0)	.24	.15	2.0	(0)
Margarine ¹⁰ (1 tbs.).....	101	460	...	...	...	(0)
Milk: fluid, whole (1 cup).....	166	(390)	.09	.42	.3	3
Molasses: cane, medium (1 tbs.).....	46	...	...	.02	.2	...
Oatmeal (1 cup C).....	148	(0)	.22	.05	.4	(0)
Oranges (1 medium).....	70	(290)	.12	.04	.4	77
Oysters ¹¹ (1 cup R).....	200	770	.35	.48	2.8	...
Peaches (1 medium R).....	46	880	.02	.05	.9	8
Peanut butter (1 tbs.).....	92	0	.02	.02	2.6	(0)
Peanuts: roasted, chopped (1 tbs.).....	50	0	.03	.01	1.5	(0)
Peas: green, immature (1 cup C).....	111	1,150	.40	.22	3.7	24
Plums (1 R).....	29	200	.04	.02	.3	3
Pork: loin ³ (3 oz. C).....	284	(0)	.71	.20	4.3	0
Potatoes: white (1 cup mashed) ¹²	159	50	.16	.10	1.7	14
Prunas: unsulfured ¹⁴ (1 cup C).....	310	2,210	.07	.20	2.0	2
Raisins: unsulfured (1 tbs.).....	26	trace	.02	.01	trace	trace
Rice: white (1 cup C).....	201	(0)	.02	.01	.7	(0)
Round steak ³ (3 oz. C).....	197	20	.06	.19	4.7	0
Salmon: pink, canned (3 oz.).....	122	60	.03	.16	6.8	(0)
Sausage: pork, canned (4 oz.).....	340	(0)	.23	.27	3.4	0
Spaghetti: enriched (1 cup C).....	218	(0)	.25	.15	2.1	(0)
Spinach (1 cup C).....	46	21,200	.14	.36	1.1	54
Sugar: granulated (1 tsp.).....	16	(0)	(0)	(0)	(0)	(0)
Sweetpotatoes (1 baked).....	183	11,410 ¹²	.12	.08	.9	28
Tomatoes (1 medium R).....	30	1,640	.08	.06	.8	35
Turkey: medium fat (4 oz. R).....	304	...	.10	.16	9.1	(0)
Turnips: diced (1 cup C).....	42	trace	.06	.09	.6	28
Veal cutlet ³ (3 oz. C).....	184	...	.07 ¹⁵	.24 ¹⁵	5.2 ¹⁵	0

¹ R—raw; C—cooked. ² Cooked short time in small amount of water. ³ Boneless. ⁴ 4% nonfat milk solids. ⁵ Year-round average. ⁶ Made from skim milk. ⁷ Bone out. Vitamin values based on muscle meat only. ⁸ Based on yellow corn; white corn contains only a trace. ⁹ Patent. ¹⁰ Vitamin A added. ¹¹ Meat only. ¹² If very pale varieties only were used, value would be much lower. ¹³ Milk added. ¹⁴ No sugar added. ¹⁵ Data assume cut to be prepared by braising or pot roasting. Use of proportionate quantity of drippings would add approximately 50% more thiamine and niacin and 25% more riboflavin.

NOTE: Parentheses denote imputed values. The sign ... shows that no basis could be found for imputing a value although there was some reason to believe that a measurable amount might be present.

Chemical Elements

Source: Professor Philip S. Chen, Atlantic Union College.

Atomic number	Element	Symbol	Atomic weight	Density gm/cc	Melting point °C.	Boiling point °C.	Valence	Number of isotopes†	Discoverer	Date discovered
1	Hydrogen	H	1.0080	0.07†	-259.14	-252.7	1	3	Cavendish	1766
2	Helium	He	4.003	0.15†	<-272.2	-268.9	0	4	Ramsay	1895
3	Lithium	Li	6.940	0.534	186.	>1200.	1	5	Arfvedson	1817
4	Beryllium*** (Glucinum)	Be	9.013	1.84	1350.	1500.	2	4	Vauquelin	1798
5	Boron	B	10.82	2.535‡	2300.	2500.	3	5	Gay-Lussac and Thénard; Davy	1808
6	Carbon	C	12.011	2.25**	>3500.	4200.	2, 3 or 4	6	Prehistoric	....
7	Nitrogen	N	14.008	0.810†	-209.86	-195.3	3 or 5	6	Rutherford	1772
8	Oxygen	O	16.0000	1.14†	-218.4	-183.00	2	6	Priestley	1774
9	Fluorine	F	19.00	1.14†	-223.	-187.	1	4	Moissan	1886
10	Neon	Ne	20.183	0.90035 (g/10°C. 760mm)	-248.67	-245.9	0	5	Ramsay and Travers	1898
11	Sodium	Na	22.991	0.9287†	97.5	880.	1	6	Davy	1807
12	Magnesium	Mg	24.32	1.741	651.	1110.	2	6	Davy	1808
13	Aluminum	Al	26.98	2.699‡	660.0	1800.	3	6	Wöhler	1827
14	Silicon	Si	28.09	2.42**	1420.	2600.	4	6	Berzelius	1824
15	Phosphorus	P	30.975	1.83 (white)	44.1	280.	3 or 5	6	Brand	1669
16	Sulfur	S	32.066	2.0-1	112.8	444.6	2, 4 or 6	7	Prehistoric	....
17	Chlorine	Cl	35.457	1.507†	-101.6	-34.6	1, 3, 5 or 7	7	Scheele	1774
18	Argon	A	39.944	1.423†	-189.2	-185.7	0	8	Rayleigh and Ramsay	1894
19	Potassium	K	39.100	0.87	62.3	760.	1	8	Davy	1807
20	Calcium	Ca	40.08	1.54	810.	1170.	2	10	Davy	1808
21	Scandium	Sc	44.96	3.62 (10°C.)	1200.	2400.	3	8	Nilson	1879
22	Titanium	Ti	47.90	4.5	1800.	>3000.	3 or 4	8	Gregor	1791
23	Vanadium	V	50.95	5.69	1710.	3000.	2, 3, 4 or 5	8	Sefström	1830
24	Chromium	Cr	52.01	6.92	1615.	2200.	2, 3 or 6	8	Vauquelin	1798
25	Manganese	Mn	54.94	7.42	1260.	1900.	2, 3, 4, 6 or 7	6	Gahn	1774
26	Iron	Fe	55.85	7.85-88	1535.	3000.	2, 3 or 6	8	Prehistoric	....
27	Cobalt	Co	58.94	8.9	1480.	2900.	2 or 3	9	Brandt	1735
28	Nickel	Ni	58.71	8.60-90	1452.	2900.	2 or 3	11	Cronstedt	1751
29	Copper	Cu	63.54	8.30-95	1083.	2300.	1 or 2	10	Prehistoric	....
30	Zinc	Zn	65.38	7.04-16	419.43	907.	2	12	Marggraf	1746
31	Gallium	Ga	69.72	5.903	29.75	>1600.	2 or 3	11	Boisbaudran	1875
32	Germanium	Ge	72.60	5.46	958.5	2700.	4	13	Winkler	1886
33	Arsenic	As	74.91	5.73	814. (36 atm.)	615.	3 or 5	11	Albertus Magnus	1250‡
34	Selenium	Se	78.96	4.3-8	220.	688.	2, 4 or 6	14	Berzelius	1818
35	Bromine	Br	79.916	3.12†	-7.2	58.78	1, 3, 5 or 7	15	Balard	1826
36	Krypton	Kr	83.80	2.16†	-169.	-151.8	0	19	Ramsay and Travers	1898
37	Rubidium	Rb	85.48	1.532	38.5	700.	1	16	Bunsen and Kirchhoff	1861
38	Strontium	Sr	87.63	2.50-58	800.	1150.	2	16	Davy	1808
39	Yttrium	Y	88.92	3.80	1490.	2500.	3	15	Gadolin	1794
40	Zirconium	Zr	91.22	6.44	1700.	>2900.	4	12	Klaproth	1789
41	Niobium*** (Columbium)	Nb	92.91	8.4	1950.	>3300.	3 or 5	10	Hatchett	1801
42	Molybdenum	Mo	95.95	9.01	2620±10	3700.	2, 3, 4, 5 or 6	13	Hjelm	1781
43	Technetium	Tc	99.*	11.487	2300.	.....	2, 3, 4 or 6	12††	Perrier and Segrè	1937
44	Ruthenium	Ru	101.1	12.06	2450.	>2700.	3, 4, 6 or 8	13	Klaus	1844
45	Rhodium	Rh	102.91	12.44	1955.	>2500.	3	10	Wollaston	1803
46	Palladium	Pd	106.4	12.16 (20°C.)	1555.	2200.	2 or 4	13	Wollaston	1803
47	Silver	Ag	107.880	10.503††	960.5	1950.	1	13	Prehistoric	....
48	Cadmium	Cd	112.41	8.648	320.9	767.	2	14	Stromeyer	1817
49	Indium	In	114.82	7.28	155.	1450.	1 or 3	13	Reich and Richter	1863
50	Tin	Sn	118.70	7.29	231.83	2260.	2 or 4	18	Prehistoric	....
51	Antimony	Sb	121.76	6.618	630.5	1380.	3 or 5	16	Prehistoric	....
52	Tellurium	Te	127.61	6.25**	452.	1390.	2, 4, or 6	17	von Reichenstein	1782
53	Iodine	I	126.91	4.94	113.5	184.35	1, 3, 5 or 7	18	Courtois	1811

Atomic number	Element	Symbol	Atomic weight	Density gm/cc	Melting point °C.	Boiling point °C.	Valence	Number of isotopes†	Discoverer	Date discovered
54	Xenon	Xe	131.30	3.52†	-140.	-109.1	0	23	Ramsay and Travers	1898
55	Cesium	Cs	132.91	1.873	26.	670.	1	18	Bunsen and Kirchhoff	1860
56	Barium	Ba	137.36	3.78	850.	1140.	2	17	Davy	1808
57	Lanthanum	La	138.92	6.5	826.	1800.	3	15	Mosander	1839
58	Cerium	Ce	140.13	6.9	770.	1400.	3 or 4	14	Klaproth; Berzelius and Hisinger	1803
59	Praseodymium	Pr	140.92	6.475	940.	3450.	3, 4 or 5	9	Auer von Welsbach	1885
60	Neodymium	Nd	144.27	6.96	840.	3300.	3	13	Auer von Welsbach	1885
61	Promethium	Pm	145.*	.....	.....	.....	3	12††	Marinsky and Glendenin	1945
62	Samarium	Sm	150.35	7.7-8	1350.	1900.	2 or 3	14	Boisbaudran	1879
63	Europium	Eu	152.0	5.24	1100.	1700.	2 or 3	12	Demarcay	1901
64	Gadolinium	Gd	157.26	7.95	1350.	3000.	3	13	Marignac	1880
65	Terbium	Tb	158.93	8.33	1400.	2800.	3 or 4	10	Mosander	1843
66	Dysprosium	Dy	162.51	8.56	1475.	2600.	3	10	Boisbaudran	1886
67	Holmium	Ho	164.94	8.76	1475.	2700.	3	7	Soret	1878
68	Erbium	Er	167.27	9.06	1475.	2600.	3	9	Mosander	1843
69	Thulium	Tm	168.94	9.34	1500.	2400.	3	6	Cleve	1879
70	Ytterbium	Yb	173.04	9.01	824.	1800.	3	10	Marignac	1878
71	Lutetium	Lu	174.99	9.74	1650.	3500.	3 or 4	8	Urbain	1907
72	Hafnium	Hf	178.50	13.3	1700.	3200.	4	11	Coster and von Hevesy	1923
73	Tantalum	Ta	180.95	16.6	2850.	4100.	3 or 5	9	Ekeberg	1802
74	Tungsten	W	183.86	18.6-19.1	3370.	5900.	2, 4, 5 or 6	12	d'Elhuyar	1783
75	Rhenium	Re	186.22	20.53 (20°C.)	3000.	.....	4	7	Noddack and Berg	1925
76	Osmium	Os	190.2	22.5	2700.	5300.	2, 3, 4 or 8	13	Tennant	1804
77	Iridium	Ir	192.2	22.42	2350.	4800.	3 or 4	7	Tennant	1804
78	Platinum	Pt	195.09	21.37	1755.	4300.	2 or 4	9	De Ulloa	1748
79	Gold	Au	197.0	19.3††	1063.0	2600.	1 or 3	12	Prehistoric	.....
80	Mercury	Hg	200.61	13.596†	-38.87	356.90	1 or 2	14	Prehistoric	.....
81	Thallium	Tl	204.39	11.86	303.5	1650.	1 or 3	13	Crookes	1861
82	Lead	Pb	207.21	11.347††	327.5	1620.	2 or 4	15	Prehistoric	.....
83	Bismuth	Bi	209.00	9.80	271.	1450.	3 or 5	17	Geoffroy	1753
84	Polonium	Po	210.	.....	.....	.....	.....	19	Curie	1898
85	Astatine	At	210.*	.....	470.	.....	1, 3, 5 or 7	15	Corson et al	1940
86	Radon	Rn	222.	9.739†	-71.	-61.8	0	12	Dorn	1900
87	Francium	Fr	223.*	.....	23.	.....	1	10	Perey	1939
88	Radium	Ra	226.05	6.0	960.	1140.	2	12	Curie	1898
89	Actinium	Ac	227.	.....	.....	.....	3	8	Debierne	1899
90	Thorium	Th	232.05	11.13	1845.	3000.	4	13	Berzelius	1828
91	Protactinium	Pa	231.	.....	.....	.....	5	10	Hahn and Meitner	1917
92	Uranium	U	238.07	18.7	1850.	3927.	3, 4 or 6	14	Klaproth	1789
93	Neptunium	Np	237.*	17.7	.....	.....	3, 4, 5 or 6	11††	McMillan and Abelson	1940
94	Plutonium	Pu	242.*	.....	.....	.....	3, 4, 5 or 6	11††	Seaborg et al	1940
95	Americium	Am	243.*	11.7	>850.	.....	3	8††	Seaborg et al	1944
96	Curium	Cm	242.	.....	.....	.....	3	8††	Seaborg et al	1944
97	Berkelium	Bk	249.*	.....	.....	.....	3 or 4	3††	Seaborg et al	1950
98	Californium	Cf	249.*	.....	.....	.....	3	2††	Seaborg et al	1950
99	Einsteinium	E	253.	.....	.....	.....	3	1††	Ghiorso et al	1954
100	Fermium	Fm	255.	.....	.....	.....	3	1††	Studier et al	1954
101	Mendelevium	Mv	256.*	.....	.....	.....	3	1††	Ghiorso et al	1955
102	Nobelium	No	253	.....	.....	.....	3	1††	Sw., Br., & Am.	1957

* Mass number of the isotope of longest known half-life.

† Isotopes are different forms of the same element, having the same atomic number but different atomic weights. The number of isotopes given includes only those that are stable and natural occurring, excluding those marked ††.

‡ Liquid. § Amorphous. ¶ Graphite. ** Crystalline. †† Compressed. ‡‡ Cast. §§ Exact date doubtful—born 1193 and died 1280. ††† Have been artificially produced. *** New name adopted by International Union of Chemistry, replacing old name in parentheses. < Is less than. > Is greater than.

Figures in parentheses are tentative or theoretical.

The number of isotopes of each element is increased by discovery or by manufacture.

Scientific Inventions, Discoveries and Theories

Source: *Encyclopaedia Britannica*.

Inventions

- Adding machine, recording: William S. Burroughs, 1888.
- Airplane: Wilbur and Orville Wright, 1903.
- Air brake, railroad: George Westinghouse, 1868.
- Air pump: Otto von Guericke, 1650.
- Automobile: (Product of inventions of many men. Gottlieb Daimler is frequently given credit, c.1887.)
- Bakelite: Leo H. Baekeland, 1908.
- Balloon, hot-air: Joseph and Jacques Montgolfier, 1783.
- Barometer: Evangelista Torricelli, 1643.
- Camera, Kodak: George Eastman, 1888.
- Carburetor, spray: Charles E. Duryea, 1892.
- Cellophane: J. E. Brandenberger, 1911.
- Celluloid: John W. and I. S. Hyatt, 1870.
- Clock, pendulum: Christiaan Huygens, 1656.
- Converter, Bessemer: William Kelly, 1851. (Patent bought by Sir Henry Bessemer, who made a similar invention in 1856.)
- Cotton gin: Eli Whitney, 1793.
- Cyanide: Nikodem Caro and Adolf Frank, 1905.
- Cyclotron: Ernest O. Lawrence, 1931.
- Daguerreotype process: Louis J. M. Daguerre, 1839.
- Diesel engine: Rudolf Diesel, 1897.
- Dynamite: Alfred B. Nobel, 1862.
- Dynamo: Michael Faraday, 1831.
- Dynamo, industrial: Zénobe Gramme, 1872.
- Electromagnet: William Sturgeon, 1823.
- Electroplating: Luigi Brugnatelli, 1805.
- Elevator, passenger: Elisha G. Otis, 1857.
- Elevator safety device: Elisha G. Otis, 1852.
- Engine, high-speed internal-combustion: Gottlieb Daimler, 1885.
- Filament, tungsten: Irving Langmuir, 1915.
- Flying shuttle: John Kay, 1733.
- Food preservation, hermetically sealed (meat): François (Nicolas) Appert, 1810, with little success.
- Fountain pen: Lewis E. Waterman, 1884. (First successful one.)
- Frequency modulation (FM): Edwin H. Armstrong, 1933.
- Guncotton: Christian Schönbein, 1845.
- Gyrocompass: Elmer A. Sperry, 1905.
- Gyroscope: Léon Foucault, 1852.
- Helicopter: Igor I. Sikorsky, 1909; Louis C. Bréguet equipped first passenger carrying helicopter, 1909; first successful modern helicopter, Heinrich K. J. Focke, 1937-41.
- Hydroplane: Charles M. Ramus propounded idea around 1870; Glenn H. Curtiss, 1911.
- Jet propulsion (aircraft): Sir Frank Whittle, 1930.
- Lamp, electric incandescent: (Inventor uncertain; Thomas A. Edison, who made a lamp in 1879, is sometimes credited.)
- Lens, bifocal: Benjamin Franklin, c.1760.
- Lightning rod: Benjamin Franklin, 1752.
- Linotype machine: Ottmar Mergenthaler, 1885 (patent); first used, 1886.
- Lithography: Aloys Senefelder, 1796.
- Machine gun: Richard J. Gatling, 1861.
- Match, friction: John Walker, 1827.
- Mercury-vapor lamp: Peter C. Hewitt, 1912.
- Microscope, compound: Zacharias Janssen, 1590.
- Microscope, electron: Vladimir Zworykin et al., 1939.
- Miner's safety lamp: Sir Humphry Davy, 1815.
- Monotype machine: Tolbert Lanston, 1887.
- Motion pictures: Thomas A. Edison, 1893.
- Motion pictures, sound: (Product of various inventions. First picture with synchronized musical score: *Don Juan*, Warner Bros., 1926. First picture with spoken dialogue: *The Jazz Singer*, Warner Bros., 1927.)
- Motor, A-C: Nikola Tesla, 1892.
- Ophthalmoscope: Hermann von Helmholtz, 1851.
- Phonograph: Thomas A. Edison, 1877.
- Photography, color: Gabriel Lippmann, 1891.
- Power loom: Edmund Cartwright, 1785.
- Printing, movable-type: Johann Gutenberg (?), c.1440.
- Printing press, rotary: Richard Hoe, 1847.
- Radar: Gregory Breit & Merle A. Tuve, 1925.
- Radio: (Product of various inventions. First practical system of wireless telegraphy: Guglielmo Marconi, 1895.)
- Radio telephone: Lee De Forest, 1906.
- Radio tube, diode: Sir John Ambrose Fleming, 1904.
- Radio tube, triode: Lee De Forest, 1906.
- Rayon: George Andemars (first known patent), 1855; perfected by Sir Joseph W. Swan, 1883.
- Reaper: Cyrus McCormick, 1834.
- Revolver: Samuel Colt, 1835.
- Rifle, automatic: John M. Browning, 1918.
- Rubber, vulcanized: Ch. Goodyear, 1839.
- Screw propeller: John Ericsson, 1837.
- Self-starter, automobile: Charles F. Kettering, 1911.
- Sewing machine: Elias Howe, 1846.
- Spinning frame: Sir Richard Arkwright, 1769.
- Spinning Jenny: James Hargreaves, 1764.
- Spinning mule: Samuel Crompton, 1779.
- Steamboat: Robert Fulton, 1807. (First commercially successful one in U.S.A.)
- Steam engine: James Watt, 1765. (First practical one.)
- Tank, military: Sir Ernest Swinton, 1914.

- Telegraph, electromagnetic recording:** Samuel F. B. Morse, 1837.
- Telephone:** Alexander Graham Bell, 1876.
- Telescope:** Hans Lippershey (?), c.1608.
- Television:** Successful demonstration by J. L. Baird in England and C. F. Jenkins in U. S., in early 1920's. (First commercial TV: July 1, 1941, over WNBT, New York.)
- Thermometer:** Galileo Galilei, 1593.
- Tire, pneumatic:** John B. Dunlop, 1888.
- Tractor, caterpillar:** Benjamin Holt, 1900.
- Transformer, electric:** Wm. Stanley, 1885.
- Transistor:** John Bardeen, William Shockley and Walter Brattain, 1948.
- Typewriter:** First practical one invented by Christopher Sholes, Carlos Glidden and Samuel W. Soule in 1867; patented by Sholes in 1868.
- Zeppelin:** Ferdinand von Zeppelin, 1900.
- Discoveries and Theories**
- Adrenaline, isolation of:** Jokichi Takamine, 1901.
- Aluminum manufacture by electrolytic action:** Charles M. Hall, 1886.
- Antitoxin, diphtheria:** Emil von Behring, 1890.
- Atom smashing with slow neutrons:** Enrico Fermi, 1934. (Experiment repeated by Lise Meitner and Otto Hahn in 1938.)
- Atomic numbers:** Henry Moseley, 1913.
- Atomic theory:** John Dalton, 1803.
- Aureomycin:** Benjamin M. Duggar, 1948.
- Bacteria:** Anton van Leeuwenhoek, 1683.
- Blood, circulation of:** William Harvey, 1628.
- Classification of plants and animals:** Carolus Linnaeus, 1737-53.
- Combustion, nature of:** Antoine Lavoisier, 1777.
- Conditioned reflex:** Ivan Pavlov, c.1910.
- Deuterium (heavy hydrogen):** Harold C. Urey, 1931.
- Displacement of water, principle of:** Archimedes, 3rd century B.C.
- Electromagnetic waves:** Heinrich Hertz, 1886.
- Electron:** Sir Joseph J. Thomson, 1897.
- Electron, wave nature of:** Louis Victor de Broglie, 1924.
- Ether, first used as anesthetic:** Crawford W. Long, 1842.
- Evolution by natural selection:** Charles Darwin, 1859.
- Falling bodies, law of:** Galileo Galilei, 1590.
- Gases, laws governing:** Joseph Gay-Lussac, 1809.
- Gravitation, law of:** Sir Isaac Newton, 1687.
- Helium on sun:** Sir Joseph Lockyer, 1868.
- Heredity, laws of:** Gregor Mendel, 1865.
- Induction, electric:** Joseph Henry, 1828.
- Insulin:** Sir Frederick G. Banting and J. J. R. MacLeod, 1922.
- Intelligence testing, modern:** Alfred Binet and Theodore Simon, 1905.
- Isotopes, mass spectra of:** Francis W. Aston, 1919.
- Isotopes, theory of:** Frederick Soddy, 1912.
- Light, electromagnetic theory of:** James Clerk Maxwell, 1873.
- Light, velocity of:** Olaus Römer, 1675.
- Molecular hypothesis:** Amadeo Avogadro, 1811.
- Neutron:** James Chadwick, 1932.
- Ohm's Law:** Georg S. Ohm, 1827.
- Ozone:** Christian Schönbein, 1839.
- Penicillin:** Sir Alexander Fleming, 1929.
- Periodic table:** Dmitri Mendeleev, 1869.
- Positron:** Carl D. Anderson, 1932.
- Proton:** Ernest Rutherford, 1919.
- Psychoanalysis:** Sigmund Freud, c.1904.
- Quantum mechanics:** Werner Heisenberg, 1925.
- Quantum theory:** Max von Planck, 1901.
- Rabies preventive:** Louis Pasteur, 1885.
- Radioactivity:** Antoine Becquerel, 1896.
- Radioactivity, artificial:** Frédéric and Irène Joliot-Curie, 1934.
- Relativity, theories of:** Albert Einstein, 1905-53.
- Salk antipolio vaccine:** Jonas E. Salk, announced successful 1955.
- Schick test of susceptibility to diphtheria:** Béla Schick, 1913.
- Secretin, isolation of:** Sir William Bayliss and Ernest Starling, 1902.
- Soda manufacture from salt:** Ernest Solvay, 1861.
- Solar system, heliocentricity of:** Nicolaus Copernicus, 1530. (Also Aristarchus of Samos, 3rd century B.C.)
- Spectrum analysis:** Robert Bunsen and Gustav Kirchhoff, 1859.
- Sulfa drugs as bactericides:** Gerhard Domagk, 1932.
- Surgery, antiseptic:** Sir Joseph Lister, 1867.
- Tuberculosis bacillus:** Robert Koch, 1882.
- Vaccination:** Edward Jenner, 1796.
- Virus, crystalized:** Wendell M. Stanley, 1935.
- Vitamin A:** Elmer V. McCollum and M. Davis, 1912-14.
- Vitamin B:** Elmer V. McCollum, 1915-16.
- Vitamin C:** A. Holst and T. Froehlich, 1912.
- Vitamin D:** Elmer V. McCollum, 1922.
- Vitamin 'D, irradiated:** Harry Steenbock, 1924.
- Wassermann test for syphilis:** August von Wassermann, 1906.
- Water, synthesis of:** Henry Cavendish, 1781.
- Wilson Cloud Chamber:** Charles T. R. Wilson, 1911.
- X-rays:** Wilhelm Roentgen, 1895.

The Races of Mankind

by PROFESSOR WILTON MARION KROGMAN

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Classification of Man into groups called "races" rests upon the basic fact that all peoples belong to the same genus and species, *Homo sapiens*. This is important to keep in mind, for it implies that all peoples are much more alike than different.

Scientists classify Man by using a number of physical traits, most of them based upon observation rather than upon precise measurement (blood-groups are an exception). Examples of these are stature and head-form (determined by a breadth/length ratio), skin color, hair color, form and texture, eye color, nose shape, mouth form, shape of face with special reference to cheekbones. Other criteria, such as arm and leg proportions, are more specialized. Two things are noteworthy: (1) most physical traits are external; (2) physical traits are so variable that a single trait has virtually no diagnostic value.

We may define a *race* as a sub-group of Mankind more or less set apart by a heritable combination of physical traits.

There are three, possibly four, great aggregates of races, usually called *stocks*: Caucasoid, Mongoloid, Negroid, and Archaic Caucasoid (or Australoid). The first three are often referred to as "White," "Yellow," and "Black." This is not really correct; peoples of North-Central India are Caucasoids, yet their skin color is brown to dark brown; certain tribes of Northeast Africa are Negroids, yet their skin color is light brown to brown. Variability also may be seen in stature: the tallest people in the world are found in Denmark and the Scottish Highlands, in East Africa, and in southernmost South America—respectively Caucasoid, Negroid, and Mongoloid. It must be re-emphasized that not one or two traits, but an aggregate of traits, of genetic origin, provides the only valid method of setting up stock or racial classification.

Caucasoids are the peoples of Europe, the adjacent shores of North Africa, and of Asia Minor and the northern half of India. The following races belong to the Caucasoid stock: Nordic, or Northwest European, Alpine or Central European, Mediterranean or Southwest European, Baltic or Northeast European, Dinaric or Southeast European, Armenoid in western Asia Minor, and Indic (often called Hindu) in North-Central India. These races are not, of course, absolutely limited to those geographical areas. For example, the Mediterranean race is found also in North Africa, especially Egypt, and in Asia Minor, where it is represented by the Bedouin Arabs of Arabia. Other Caucasoid peoples are the Magyars, the Finns, and the Lapps, who show traces of Mongoloid mixtures, especially the last.

The Negroids are the peoples of Africa and Oceania, termed respectively the African Negroids and the Oceanic Negroids. The following African Negroid races are commonly recognized: Forest or West African or "True" Negro in West Africa, Sudanic in Central Africa, Nilotic in East Africa, Hamitic in Northeast and North Africa, Bantu (better: Bantu-speaking) in South Africa, and Bushman-Hottentot in the Kalahari Desert of South Africa. The Oceanic Negroids are commonly called Melanesian or Papuan, and are found chiefly in Borneo, New Caledonia, the Solomons, the Hebrides and Fiji.

Of special interest among Negroids are Pygmies, who average about four feet in stature. They are found in Africa in the Congo region, in the Ituri Forest, and in Oceania on the Andaman Islands, the Malay Peninsula, the Philippines, and Borneo.

The Mongoloids are basically the peoples of Asia, but are also in the Western Hemisphere as the American Indians, and are represented in Malaysia and in Oceania. The Mongoloids are usually divided into the following races: Sinic of China and Japan, Palearctic of Siberia, Turkic and Tungic or Mongolic of Central Asia, and Malayan of Malaysia. In the Western Hemisphere they are found as Eskimos and the Indians of the Americas. In Polynesia, i.e., in Samoa, Tonga, Hawaii and west to Easter Island, the Mongoloid stock is a basic element, with some Caucasoid and some Negroid (Melanesian?) admixture.

The Archaic Caucasoids are found in Australia as the Australian aborigines and in Japan as the Ainu. They may possibly be an element in Melanesia and in Ceylon and South India, e.g., the Toda, the Vedda, and other tribes.

This is a brief survey of the "stocks" and "races" of the world. There is much intermixing and some overlapping. This leads to two very important biological observations: (1) *there are no pure races*; (2) *there are no superior or inferior races*. We know from history that all peoples, upon contact, have crossed their genetically based physical traits. We know from human anatomy that in fundamental structure all peoples are identical.

As far as biological Man is concerned, what he is, is related to his cultural environment, rather than to any innate (or inherited) ability or aptitude. There is no "German race," only a German nationality; there is no "Jewish race," only a Jewish socio-religious community; there is no "Aryan race," only an Aryan language; there is no "master race," only a political bombast!

Communicable Diseases

Source: *Control of Communicable Diseases in Man*, an official report of the American Public Health Assn.

Disease	Incubation period*	Period of communicability
Chickenpox (varicella).....	2 to 3 weeks	From 1 day before appearance of vesicles to 6 days after.
Common cold.....	12 to 72 hours; usually 24 hrs.	From 1 day before onset to 5 days after.
Conjunctivitis.....	1 to 3 days	During course of active infection.
Diphtheria.....	2 to 5 days	Usually 2 weeks or less; seldom more than 4 weeks.
Dysentery, amebic.....	3 to 4 weeks (varies widely)	During infection; possibly for years if untreated.
Food poisoning: Botulism.....	Within 18 hours	Not applicable.
Salmonella infection.....	6 to 48 hours in epidemics	3 days to 3 weeks (extremely variable).
Staphylococcus intoxication.....	½ to 4 hours	Not applicable.
German measles (rubella).....	14 to 21 days; usually 18	At least 4 days after onset of catarrhal symptoms.
Gonorrhea.....	3 to 9 days; sometimes 14	Indefinitely unless treated.
Impetigo contagiosa.....	Within 5 days; often 2	Until lesions are healed.
Influenza.....	1 to 3 days	Probably 1 week after onset.
Measles (rubeola).....	10 days (to onset) 14 days (to rash)	From 4 days before rash appears to 5 days after.
Meningitis, meningococcal.....	2 to 10 days	1 day after appropriate medication.
Mumps.....	12 to 26 days; commonly 18	From 2 days before onset to 9 days after, or until swelling subsides.
Pneumonia: Bacterial.....	Believed to be 1 to 3 days	Unknown.
Virus.....	Believed to be 7 to 21 days; commonly 12	Unknown.
Polio myelitis.....	7 to 21 days; commonly 12	From late incubation to first few days after onset; persists in feces for 3 to 6 weeks or more.
Rabies (Hydrophobia).....	2 to 6 weeks or longer	Rarely communicated from man to man.
Rheumatic fever.....	Not applicable†	Not known to be communicable.
Scarlet fever and streptococcal sore throat.....	2 to 5 days	During incubation and clinical illness, about 10 days. May last for months in untreated patients.
Smallpox.....	7 to 16 days; commonly 12	From first symptoms to disappearance of scabs and crusts, a period of 2 to 3 weeks.
Syphilis.....	10 days to 10 weeks; usually 3 weeks	Variable and not definitely known.
Tetanus.....	4 days to 3 weeks	Not communicable from man to man.
Trichinosis.....	2 to 28 days after eating infected meat; usually 9 days	Not directly transmitted from man to man.
Tuberculosis.....	4 to 6 weeks (to primary phase)	As long as tubercle bacilli are discharged by patient.
Typhoid fever.....	1 to 3 weeks	As long as typhoid bacilli appear in excreta; 2 to 5% of patients become permanent carriers.
Whooping cough (pertussis)....	Commonly 7 days, almost uniformly within 10 days, and not exceeding 21 days	From 7 days after exposure to 3 weeks after onset of typical paroxysms.

* Usual limits. † Usually precipitated by a previous infection.

Gestation, Incubation and Longevity of Certain Animals

Source: T. Donald Carter, American Museum of Natural History.

Animal	Gestation and incubation, in days & (average)	Longevity, in years & (record exceptions)	Animal	Gestation and incubation, in days & (average)	Longevity, in years & (record exceptions)
Ass.....	340-385	18-20 (46)	Kangaroo.....	c. 39	10-12 (16)
Bear.....	180-240*	15-20 (34)	Lion.....	105-111	10 (29)
Cat.....	52-65	10-12 (21)	Mare.....	304-419 (336)	20-25 (50+)
Chicken.....	21	7-8 (14)	Monkey.....	149-179* (164)	12-15* (29)
Cow.....	c. 280	9-12 (25)	Mouse.....	19-31*	1-3 (4)
Deer.....	140-246*	10-15 (26)	Parakeet (Budgerigar).....	17-20 (18)	8 (12+)
Dog.....	55-70 (63)	10-12 (24)	Pigeon.....	18	10-12 (39)
Duck.....	21-35* (28)	10 (15)	Rabbit.....	27-36 (31)	6-8 (15)
Elephant.....	515-760* (628)	30-40 (98)	Rat.....	21-30 (22)	3 (5)
Ewe.....	146-161 (151)	12 (16)	Sow.....	101-130 (115)	10 (22)
Goat.....	135-163 (150)	12 (17)	Squirrel.....	28-35	8-9 (15)
Groundhog.....	28-35	4-7	Vixen (fox).....	51-60	8-10 (14)
Guinea pig.....	63-71	3 (6)	Whale.....	276-365*	
Hamster, golden.....	15-19	2	Wolf.....	63	10-12 (16)
Hippopotamus.....	220-255	30 (49+)	Woman.....	270+ or -	72†

* Depending on kind. † Latest life expectancy charts list this age.

RELIGION



Principal Religions of the World

Source: Encyclopædia Britannica.

Statistics of the world's religions are only very rough approximations. Aside from Christianity, few religions, if any, attempt to keep statistical records; and even Protestants and Catholics employ different methods of counting members. All persons of whatever age who have received baptism in the Catholic Church are counted as members, while in most Protestant Churches only those who "join" the church are numbered. The compiling of statistics is further complicated by the fact that in China one may be at the same time a Confucian, a Taoist and a Buddhist. In Japan, one may be both a Buddhist and a Shintoist.

Religion	North America	South America	Europe	Asia	Africa	Oceania ¹	Total
Christian—Total.....	160,760,567	117,397,913	456,357,814	47,175,262	30,879,417	10,828,482	820,399,455
Roman Catholic.....	90,582,000 ²	111,922,000	230,338,000 ³	30,144,000	18,608,000	2,483,000	484,077,000
Eastern Orthodox.....	2,386,000	.....	112,447,669	8,106,071	5,868,089	.....	128,807,829
Protestant.....	67,792,567	2,475,913	113,572,145	8,925,191	6,403,328	8,345,482	207,514,626
Jewish ⁴	5,430,000	632,362	3,442,627	1,684,454	660,750	58,250	11,908,443
Moslem.....	33,000	342,615	12,425,300	318,341,515	85,325,598	102,000	416,570,028
Zoroastrian.....	.....	.....	.....	140,000	.....	.....	140,000
Shinto.....	.....	.....	.....	30,000,000	.....	.....	30,000,000
Taoist.....	15,000	17,000	12,000	50,000,000	1,200	8,000	50,053,200
Confucian.....	86,000	95,000	50,000	300,000,000	7,500	52,000	300,290,500
Buddhist.....	165,000	135,000	10,000	150,000,000	.....	.....	150,310,000
Hindu.....	10,000	275,000	.....	318,467,610	300,000	100,000	319,152,610
Primitive.....	50,000	1,000,000	.....	45,000,000	75,000,000	100,000	121,150,000
Others or none.....	67,422,433	872,110	86,807,259	229,790,159	17,739,535	3,308,268	405,939,764
Grand Total.....	233,972,000	117,767,000	559,105,000	1,490,599,000	209,914,000	14,557,000	2,625,914,000

¹ Includes Australia, New Zealand and Oceania. ² Includes Catholics in Central America and the West Indies. ³ Includes Communist-controlled Eurasia. ⁴ Includes total Jewish population whether or not related to the synagogue.

History of Leading Religious Groups in the United States

(50,000 members or over; figures are for continental U. S.)

Source: Yearbook of American Churches.

Baptist

American Baptist Association.—A group of Independent Missionary Baptist Churches organized into an association in 1905. Members (1956): 600,000.

American Baptist Convention.—The early historical local independency of Baptist churches in America tended to impede the formation of any general organization until in 1814 a General Missionary Convention was formed to permit Baptists to express themselves in terms of missionary activities. In 1845, the state conventions in the South withdrew to organize the Southern Baptist Convention. In 1907, the Northern Baptist Convention was organized, a delegated body under whose direction the many agencies of the Baptists in the North and West now operate. In May, 1950, the name was changed to the American Baptist Convention. Members (1956): 1,528,210.

Baptist General Conference of America.—Formerly known as the Swedish Baptist General Conference of America. It has operated as a general conference since 1879. Members (1956): 59,304.

Conservative Baptist Association of America.—Organized in 1947, it is a body

with no authority over the local churches. Adherents consider the Bible infallible. Members (1956): 250,000.

Free Will Baptists.—A body of Arminian Baptists, organized in 1787 by Benjamin Randall in New Hampshire. Members (1956): 163,619.

The General Association of Regular Baptist Churches.—Founded in 1932 in Chicago by a group of churches which had withdrawn from the Northern Baptist Convention. Members (1956): 129,100.

General Baptists.—An Arminian group of Baptists, organized in 1607 and transplanted to the Colonies in 1714. It died down in the East but was revived in the Midwest in 1823 under Rev. Benoni Stinson. Members (1956): 55,300.

National Baptist Convention, U. S. A., Inc.—The older and parent convention of Negro Baptists. This body is to be distinguished from the National Baptist Convention of America, usually referred to as the "unincorporated" body. Members (1954): 4,557,416.

National Baptist Convention of America.—This is a body usually referred to as the "unincorporated" convention, not to be confused with the "incorporated" National

Baptist Convention, U. S. A., Inc., from which this body withdrew. Organized in 1895. Members (1956): 2,668,799.

National Baptist Evangelical Life and Soul Saving Assembly of U. S. A.—Organized in 1921 by A. A. Banks, Sr., as a charitable, educational, and evangelical organization. Members (1951): 57,674.

National Primitive Baptist Convention of the U. S. A.—A group of Negro Baptists opposed to all forms of church organization. Members (1952): 80,000.

North American Baptist Association.—Organized 1950 in Little Rock, Ark., as the result of a division in the American Baptist Association. In theology these churches are militantly fundamentalist. Members (1956): 261,202.

Primitive Baptists.—A large group of Baptists, largely through the South, who are opposed to all centralization, to modern missionary societies, and to Sunday schools. They are sometimes called "anti-missionary" Baptists. Members (1950): 72,000.

Southern Baptist Convention.—In 1845, Southern Baptists withdrew from the General Missionary Convention over the question of slavery and other matters and formed the Southern Baptist Convention. Members (1956): 8,700,481.

United Baptists.—This group dates from meetings of Regular Baptists and Separate Baptists held in Richmond, Va., in 1787, and a meeting under the name United Baptists in Clark County, Ky., in 1801. Members (1955): 63,641.

The United Free Will Baptist Church.—A body which set up its organization in 1901. Though ecclesiastically distinct, they are in close relations with the Free Will Baptists. Members (1952): 100,000.

Catholic and Orthodox

Armenian Apostolic Church of America.—The American branch of the Ancient Church of Armenia. Established in the U. S. in 1889. Diocesan organization under the jurisdiction of the Holy See of Etchmiadzin, Armenia, U.S.S.R. Members (1956): 102,900.

The American Carpatho-Russian Orthodox Greek Catholic Church.—This church is a self-governing diocese in communion with the Ecumenical Patriarchate of Constantinople. On Sept. 19, 1938, the late Patriarch Benjamin I canonized the diocese in the name of the Orthodox Church of Christ. Members (1955): 100,000.

Greek Archdiocese of North and South America.—Greek-speaking Orthodox Christians have had parishes in the U. S. for the last seventy years. These were first under the jurisdiction of the Metropolitan of Athens and later under the Patriarchate of Constantinople. Political changes in Europe have been reflected in this country

and have brought difficulties in all branches of the Orthodox Church. In 1931, a general convention held in New York City under the presidency of Archbishop Athenagoras brought a large measure of unity and order. Members (1956): 1,150,000.

North American Old Roman Catholic Church.—This body is identical with the Roman Catholic Church in worship, faith, etc., but differs in discipline. It was received into union with the Eastern Orthodox Church by the Archbishop of Beirut in 1911 and by the Orthodox Patriarch of Alexandria in 1912. Members (1956): 84,142.

Polish National Catholic Church of America.—After long dissatisfaction with Roman Catholic Administration in many Polish parishes, this group was organized in 1904. Members (1956): 250,000.

The Roman Catholic Church.—The largest single group of Christians in the U. S., the Roman Catholic Church is under the spiritual leadership of Pope Pius XII. This group dates back to the priests who accompanied Columbus on his second voyage to the New World. A settlement, later discontinued, was made at St. Augustine, Fla. The continuous history of this Church in the colonies began at St. Mary's in 1634, in Maryland. Members (1956): 34,563,851.

Romanian Orthodox Episcopate of America.—This body of Eastern Orthodox Christians of Rumanian descent is under the spiritual supervision and canonical jurisdiction of the Bishop of the Romanian Orthodox Church of North and South America. Members (1956): 50,000.

The Russian Orthodox Church Outside Russia.—Organized in 1920 to unite the missions and parishes of the Russian Orthodox Church outside of Russia. Members (1951): 55,000.

The Russian Orthodox Greek Catholic Church of America.—The Russian Orthodox Catholic Church entered Alaska in 1792. In 1872, its headquarters were moved from Sitka to San Francisco and, in 1905, to New York. It administers churches in the U. S., Canada, Alaska, Aleutian Is., South America and Japan. Members (1956): 760,000.

U. S. Church Membership, 1956

Source: Yearbook of American Churches.

Religious group	Members
Buddhist.....	63,000
Old Catholic and Polish National Catholic....	351,068
Eastern Orthodox.....	2,598,055
Judaism.....	5,500,000
Roman Catholic.....	34,563,851
Protestant.....	60,148,980
Total.....	103,224,954

NOTE: Compiled from figures furnished by 258 of the 268 religious bodies in the U. S.

Serbian Eastern Orthodox Church.—This body of the Eastern Orthodox Church has its own diocese and is under jurisdiction of the Serbian Patriarchate (Yugoslavia). Members (1955): 100,000.

Syrian Antiochian Orthodox Church.—This body is a division of the Orthodox Church which is under the jurisdiction of the Patriarch of Antioch. It is a member of the Federation of Orthodox Greek Catholic Churches in America. Members (1956): 110,000.

Ukrainian Orthodox Church of U.S.A.—This church was organized in the U. S. in 1919. Members (1956): 83,000.

Lutheran

American Lutheran Church.—This Church is a constituent body of the American Lutheran Conference. It is itself the result of the merger in 1930 of the Evangelical Lutheran Joint Synod of Ohio and Other States (org. 1918), the Evangelical Lutheran Synod of Iowa and Other States (org. 1854), and the Lutheran Synod of Buffalo (org. 1845). Members (1955): 871,446.

Augustana Evangelical Lutheran Church.—This group, whose constituency originally was of Swedish extraction, is a member of the American Lutheran Conference and is also a participating body in the National Lutheran Council. Organized in 1860. Members (1956): 549,604.

Evangelical Lutheran Church.—In 1917 the United Norwegian Church, the Norwegian Synod and the Hauge Synod united under the name, Norwegian Lutheran Church of America. In 1930 this group became a constituent part of the American Lutheran Conference. The new name, The Evangelical Lutheran Church, was adopted at its General Convention in 1946. Members (1956): 1,021,058.

The Evangelical Lutheran Joint Synod of Wisconsin and Other States.—This group, a constituent part of the Synodical Conference, was organized in Wisconsin in 1850. Members (1956): 339,106.

Lutheran Church-Missouri Synod.—This group, the largest constituent part of the Synodical Conference, was organized in 1847, holds to an unwavering confessionalism and is the leader in the conservative group among the Lutherans. Members (1956): 2,076,550.

Lutheran Free Church.—This body was organized in 1897 as the result of differences of opinion in the United Norwegian Church over control of the Augsburg Seminary. It became a constituent part of the American Lutheran Conference in 1930. Members (1956): 78,155.

United Evangelical Lutheran Church.—This synod was organized in 1896 in Minneapolis by a merger of the two former

Danish Lutheran Synods in America—the Danish Ev. Luth. Church Conference (1884) and the Danish Ev. Luth. Church in North America (1893). Members (1955): 54,098.

United Lutheran Church in America.—This group dates back to the Ministerium of Pennsylvania, organized in 1748, and beyond that to early colonial days. It represents the union of the General Synod, General Council, and United Synod of the South in 1918. Members (1956): 2,174,500.

Methodist

African Methodist Episcopal Church.—This group was formed in Philadelphia in 1816 and extended throughout the South after the Civil War. Members (1951): 1,166,301.

African Methodist Episcopal Zion Church.—This group was organized in 1796, coming out of the John Street Methodist Church, New York. Members (1956): 761,000.

Christian Methodist Episcopal Church.—In 1870, the General Conference of the M.E. Church, South, approved the request of its colored membership for the formation of their conferences into a separate body. Members (1951): 392,167.

Free Methodist Church of North America.—This body, organized in 1860, grew out of a movement in the Genesee Conference of the Methodist Episcopal Church towards a more original Methodism. Members (1956): 54,014.

The Methodist Church.—In April, 1939, the Uniting Conference forming The Methodist Church was held by representatives of the Methodist Episcopal Church, the Methodist Episcopal Church, South, and the Methodist Protestant Church. The Methodist Church in the United States originated with the efforts of John and Charles Wesley, leaders of the revival movement in England in the eighteenth century. Methodist emigrants from Ireland planted Methodism in America about 1760. In 1771 Francis Asbury, one of Wesley's preachers, later a Bishop, landed in Philadelphia. The Methodist Episcopal Church was organized in 1784-85. The Methodist Episcopal Church, South, dated from 1846, the separation from the Methodist Episcopal Church having taken place over the slavery issue. The Methodist Protestant Church dated from 1830, and was organized over the issue of lay representation. Members (1956): 9,422,893.

Presbyterian

Cumberland Presbyterian Church.—In 1806, a presbytery (Cumberland) of the Presbyterian Church was dissolved by the Synod of Kentucky on account of its attitude toward revivalism. Members of the presbytery organized as an independent

body in 1810 and became the Cumberland Presbyterian Church. When this body attempted to reunite with the Presbyterian Church in 1906, a minority preferred to continue as an independent church. Members (1956): 85,651.

Presbyterian Church in the U. S.—This group is the branch of the Presbyterian Church which separated from the main body at the time of the Civil War. It is often called the "Southern" Presbyterian Church. Members (1956): 829,570.

Presbyterian Church in the United States of America.—This group appeared among the earliest colonists of America. Its first church was established about 1640. Members (1956): 2,717,320.

United Presbyterian Church of North America.—This group dates back to the Reformed Presbyterian (Covenanter) Church (1643) and the Associate Presbyterian (Seceder) Church (1733), both of Scotland. These two groups appeared in America in 1774 and 1753 respectively. They united and became the Associate Reformed Presbyterian Church in 1782. A minority, however, continued as the Associate Presbyterian Church. In 1858 the two groups united and became the United Presbyterian Church. Members (1956): 251,344.

Other Religious Bodies

Apostolic Overcoming Holy Church of God.—A Negro body incorporated in Alabama in 1919. Members (1951): 75,000.

Assemblies of God.—Independent, pentecostal, evangelical, missionary churches associated for co-operative effort in district and general councils. Organized in Arkansas in 1914. Members (1956): 470,361.

Buddhist Churches of America.—Organized in 1914 as the Buddhist Mission of North America, this group was incorporated in 1942 under the present name and represents Buddhism in this country, the faith based on "the anatman doctrine, supplemented by the idea of karma, and nirvana, the holy ease or a blissful mental state of absolute freedom from evil." Members (1954): 63,000.

Christ Unity Science Church, Inc.—Established 1810. Members (1953): 1,581,286.

The Christian and Missionary Alliance.—An evangelical, evangelistic and missionary movement organized in 1887. It stresses "the deeper Christian life and consecration to the Lord's service." Members (1954): 57,109.

Christian Reformed Church.—A group of Dutch Calvinists which dissented from the Reformed Church in America in 1857 and which was strengthened by later accessions from the same source and by immigration. Members (1956): 211,454.

Church of Christ, Scientist.—Founded by Mary Baker Eddy in 1879. As defined by

Mrs. Eddy, Christian Science is the scientific system of divine healing and the reinstatement of primitive Christianity.*

The Church of God.—Inaugurated by Bishop A. J. Tomlinson, who served as General Overseer 1903-43. Episcopal in administration. Members (1955): 70,941.

Church of God (Anderson, Ind.).—This group is one of the largest of the groups which have taken the name "Church of God." Its headquarters are at Anderson, Ind. It originated about 1880. Members (1956): 127,395.

Church of God (Cleveland, Tenn.).—This body, to be differentiated from the Church of God at Anderson, Ind., is a holiness group and pentecostal. It began in 1886 in Tennessee, under the name of Christian Union, reorganized in 1902 as the Holiness Church. In 1907 it adopted the name above. Members (1956): 147,929.

Church of God in Christ.—Organized in Arkansas in 1895, by C. P. Jones and C. H. Mason, who believed there was no salvation without holiness; incorporated 1897. Members (1956): 360,428.

Church of the Brethren (Conservative Dunks).—German pietists from Crefeld, Germany, under the leadership of Peter Becker, entered the colonies in 1719, and settled at Germantown, Philadelphia, Pa. They were called Dunks (baptizers) and were immersionists. The members are conservative as to attire, oaths or affirmations, resistance to force, temperance, and the like. Members (1956): 197,290.

Church of the Nazarene.—One of the larger holiness bodies, organized in Pilot Point, Tex., Oct. 1908. It is in general accord with the early doctrines of Methodism and emphasizes entire sanctification. Members (1956): 277,618.

Churches of Christ.—This body is made up of a large group of churches, formerly reported with the Disciples of Christ, but since the religious census of 1906, reported separately. They are strictly congregational and have no organization larger than the local congregation. Members (1956): 1,700,000.

Congregational Christian Churches.—Congregational churches date back to the Pilgrim Fathers and the early colonists of New England in 1620. The Christian churches date back to the Wesleyan and revival movements at the end of the eighteenth century. These two groups of churches were merged at Seattle, Wash., in 1931. Members (1956): 1,379,394.

Disciples of Christ.—In the revival period of the early nineteenth century, a movement under Thomas Campbell and his son, Alexander, resulted in the establishment of a fellowship called Christians

*Membership figure not available. The manual of the church forbids "the numbering of people and the reporting of such statistics for publication."

or Disciples. They believe that sects are unscriptural. Members (1956): 1,922,484.

Evangelical and Reformed Church.—This body was formed on June 26, 1934, at Cleveland, Ohio, by a union of the Evangelical Synod of North America and the Reformed Church in the United States. The union was unique in that it left all details to be adjusted afterwards. The constitution was declared in effect at the General Synod which met at Lancaster, Pa., in June 1940. Members (1956): 784,270.

Evangelical Mission Covenant Church of America.—A transplantation to the U. S., in 1885, of a free-church movement in the Swedish state church. Until recently the name has been the Swedish Evangelical Mission Covenant. Members (1956): 55,311.

The Evangelical United Brethren Church.—This group had its origin in Johnstown, Pa., November 16, 1946, in the consummation of organic union between the Evangelical Church and the Church of the United Brethren in Christ. Both these former communions had their beginning in Pennsylvania in the evangelistic movement of the early 19th century. Jacob Albright was the founder of the Evangelical Church, and Dr. Philip William Otterbein was the founder of the United Brethren Church in 1800. Members (1956): 742,537.

Friends, The Five Years Meeting of.—The Five Years Meeting of Friends was formed in 1902 by 13 Yearly Meetings entering into a loose confederation. Since then, two of the original Yearly Meetings have withdrawn (Kansas and Oregon) and three Yearly Meetings outside the U. S. have joined. Members (1956): 73,095.

International Church of the Foursquare Gospel.—An evangelistic missionary body organized by Aimee Semple McPherson in 1927. The parent church is Angelus Temple in Los Angeles. Members (1956): 110,568.

Jehovah's Witnesses.—A group calling themselves primitive Christians. They believe that the Kingdom under Christ will replace all earthly governments. Members (1956): 189,517.

Jewish Congregations.—Jews arrived in the colonies before 1650. The first congregation is recorded in 1656, in New York City, the Shearith Israel (Remnant of Israel). Members (1954): 5,500,000.

Latter-day Saints, Church of Jesus Christ of.—A group in which the Bible, the Book of Mormon, the Doctrine and Covenants and the Pearl of Great Price are regarded as the word of God. The primitive church organization is sought. Members (1956): 1,289,581.

Latter-day Saints, Reorganized Church of Jesus Christ of.—A division among the Latter-day Saints (Mormons) occurred on the death of Joseph Smith in 1844. His son, Joseph Smith, became presiding officer of

this group, which has headquarters at Independence, Mo. Members (1956): 142,480.

Mennonite Church.—The largest group of the Mennonites who began arriving in the U. S. in 1683, settling in Germantown, Pa. They derive their name from Menno Simons, born 1496. Members (1956): 70,513.

Moravian Church (Unitas Fratrum).—In 1735, Moravian missionaries of the pre-Reformation faith of John Huss came to Georgia and, in 1740, to Pennsylvania. They established the Moravian Church. Members (1956): 56,449.

Pentecostal Assemblies of the World, Inc.—A pentecostal holiness group originating in the early part of the century and found largely in the Midwest. Members (1954): 60,000.

Pentecostal Church of God of America, Inc.—Organized in 1919 at Chicago, Ill. Members (1956): 103,500.

The Protestant Episcopal Church.—This group entered the colonies with the earliest settlers as the Church of England. It became autonomous, adopted its present name in 1789. Members (1956): 2,852,965.

Reformed Church in America.—This group was established by the earliest Dutch settlers of New York as the Reformed Protestant Dutch Church in 1628. Members (1956): 208,999.

The Salvation Army.—An evangelistic organization, with a military government, first set up by General William Booth in England and introduced into the U. S. in 1880. Members (1956): 247,964.

Seventh-day Adventists.—This body developed out of the Adventist movement (1833-1844), which emphasized the imminent personal return of Jesus Christ. It emphasized the observance of the seventh-day Sabbath and in 1863 was numerous enough to organize a conference. Members (1956): 283,140.

Spiritualists, International General Assembly of.—Organized in Buffalo, N. Y., in 1936. Members (1956): 164,072.

Unitarian Churches.—The Unitarian movement in Congregationalism, beginning in the eighteenth century, produced the American Unitarian Association in 1825. In 1865 a national conference was organized. Members (1956): 101,549.

United Church of Christ.—A merger in 1957 of the *Evangelical and Reformed Church* and the *Congregational Christian Churches*. Pending the adoption of a constitution for the United Church of Christ the present structures and procedures of the two groups will continue in effect.

United Pentecostal Church, Inc.—Pentecostal Church, Inc., and Pentecostal Assemblies of Jesus Christ merged in 1945 at St. Louis. Members (1955): 125,000.

Bishops of the Protestant Episcopal Church

Source: Alexander M. Rodger, Secretary, The House of Bishops, 207 Fairmount Rd., Ridgewood, N. J.
(Note: M—Missionary Bishop; C—Coadjutor; S—Suffragan)

Presiding Bishop: Henry K. Sherrill, New York City. Vice President of National Council: John B. Bentley, New York City.

- Alabama: Chas. C. J. Carpenter, George M. Murray (S), Birmingham.
Alaska: Wm. J. Gordon, Jr. (M), Fairbanks.
Albany (N. Y.): Frederick L. Barry, David E. Richards (S).
Arizona: Arthur B. Kinsolving II (M), Phoenix.
Arkansas: Robert R. Brown, Little Rock.
Atlanta (Ga.): Randolph R. Claiborne.
Bethlehem (Pa.): Frederick J. Warnecke.
California: Karl M. Block, Henry H. Shires (S), San Francisco.
Central America: Reginald H. Gooden (M in charge), Ancon, C. Z.
Central Brazil: Louis C. Melcher (M), Rio de Janeiro.
Central New York: Malcolm E. Peabody, Walter M. Higley (S), Syracuse.
Chicago: Gerald F. Burrill, Charles L. Street (S).
Colorado: Joseph S. Minnis, Denver.
Connecticut: Walter H. Gray, Robert McC. Hatch (S), Hartford.
Cuba: Alexander H. Blankingship (M), Havana.
Dallas (Tex.): C. Avery Mason, Joseph M. Harte (S).
Delaware: J. Brooke Mosley, Wilmington.
East Carolina: Thomas H. Wright, Wilmington, N. C.
Eastern Oregon: Lane W. Barton (M), Bend.
Easton (Md.): Allen J. Miller.
Eau Claire (Wis.): William W. Horstick.
Erie (Pa.): William Crittenden.
European Churches: Norman B. Nash, Boston, Mass.
Florida: Hamilton West, Jacksonville.
Fond du Lac (Wis.): William H. Brady.
Georgia: Albert R. Stuart, Savannah.
Haiti: C. A. Voegell (M), Port-au-Prince.
Harrisburg (Pa.): J. Thomas Heistand, Harrisburg; Earl M. Honaman (S), Williamsport.
Honolulu: Harry S. Kennedy (M).
Idaho: Norman L. Foote, Boise.
Indianapolis: Richard A. Kirchhoffer, John P. Craine (C).
Iowa: Gordon V. Smith, Des Moines.
Kansas: Goodrich F. Fenner, Edward C. Turner (C), Topeka.
Kentucky: C. Gresham Marmion, Jr., Louisville.
Lexington (Ky.): William R. Moody.
Liberia: Bravid W. Harris (M), Monrovia.
Long Island: James P. DeWolfe, Jonathan G. Sherman (S), Garden City, N. Y.
Los Angeles: Francis E. I. Bloy, Donald J. Campbell (S).
Louisiana: Girault M. Jones, New Orleans; Iveson B. Noland (S), Alexandria.
Maine: Oliver L. Loring, Portland.
Maryland: Noble C. Powell, Harry L. Doll, (S), Baltimore.
Massachusetts: Anson Phelps Stokes, Jr., Boston, Frederic C. Lawrence (S).
Mexico: Efrain Salinas y Velasco¹ (M), Mexico City.
Michigan: Richard S. Emrich, Archie H. Crowley (S), Detroit.
Milwaukee: Donald H. V. Hallock.
Minnesota: Hamilton H. Kellogg, Minneapolis.
Mississippi: Duncan M. Gray, Jackson.
Missouri: Arthur C. Lichtenberger, St. Louis.
Montana: Chandler W. Sterling, Helena.
Nebraska: Howard R. Brinker, Omaha.
Nevada: William F. Lewis (M), Reno.
New Hampshire: Charles F. Hall, Concord.
New Jersey: Alfred L. Banyard, Trenton.
New Mexico and Southwest Texas: Charles J. Kinsolving III, Albuquerque, N. Mex.
New York: Horace W. B. Donegan, Charles F. Boynton (S), New York City.
Newark (N. J.): Benjamin M. Washburn, Leland Stark (C).
North Carolina: Edwin A. Penick, Raleigh; Richard H. Baker (C), Greensboro.
North Dakota: Richard Emery (M), Fargo.
North Texas: George H. Quarterman (M), Amarillo.
Northern Indiana: Reginald Mallett, South Bend.
Northern Michigan: Herman R. Page, Menominee.
Ohio: Nelson M. Burroughs, Cleveland.
Oklahoma: Chilton Powell, Oklahoma City.
Olympia (Wash.): Stephen F. Bayne, Jr., Seattle.
Oregon: Benjamin D. Dagwell, James W. F. Carman (C), Portland.
Panama Canal Zone: Reginald H. Gooden (M), Ancon.
Pennsylvania: Oliver J. Hart, J. Gillespie Armstrong (S), Philadelphia.
Philippines: Lyman C. Ogilby (S), Manila.
Pittsburgh: Austin Pardue, William S. Thomas (S).
Puerto Rico: Albert E. Swift (M), Santurce.
Quincy (Ill.): William L. Essex, Peoria.
Rhode Island: John S. Higgins, Providence, R. I.
Rochester (N. Y.): Dudley S. Stark.
Sacramento (Calif.): A. W. Noel Porter, Clarence R. Haden, Jr. (C).
Salina (Kans.): Arnold M. Lewis (M).
San Joaquin (Calif.): Sumner F. D. Walters (M), Stockton.

¹ To retire Dec. 31, 1957.

South Carolina: Thomas N. Carruthers, Charleston.
 South Dakota: Conrad H. Gesner (M), Sioux Falls.
 South Florida: Henry I. Louttit, Winter Park, William F. Moses (S).
 Southern Brazil: Egmont M. Krischke (M), Porto Alegre.
 Southern Ohio: Henry W. Hobson, Cincinnati.
 Southern Virginia: George P. Gunn, Norfolk.
 Southwestern Brazil: Plinio L. Simões (M), Santa Maria.
 Southwestern Virginia: William H. Marmon, Roanoke.
 Spokane (Wash.): Russell S. Hubbard (M).
 Springfield (Ill.): Charles A. Clough.
 Tennessee: Theodore N. Barth, Memphis; John Vander Horst (S), Chattanooga.
 Texas: John E. Hines, Houston; James P. Clements (S), Austin; Percy Goddard (S), Tyler.

Upper Carolina: C. Alfred Cole, Columbia, S. C.
 Utah: Richard S. Watson (M), Salt Lake City.
 Vermont: Vedder Van Dyck, Burlington.
 Virginia: Frederick D. Goodwin, Robert F. Gibson (C), Richmond.
 Washington (D. C.): Angus Dun.
 West Missouri: Edward R. Welles, Grandview.
 West Texas: Everett H. Jones, R. Earl Dicus (S), San Antonio.
 West Virginia: Wilburn C. Campbell, Charleston.
 Western Massachusetts: William A. Lawrence, Springfield.
 Western Michigan: Dudley B. McNeil, Grand Rapids.
 Western New York: Lauriston L. Scaife, Buffalo.
 Western North Carolina: M. George Henry, Asheville, N. C.
 Wyoming: James W. Hunter (M), Laramie.

Bishops of The Methodist Church

Source: Methodist Information, New York City.

President: Bishop W. Angie Smith, Oklahoma City. President-designate: Bishop G. Bromley Oxnam, Washington, D. C. (to take office April 10, 1958). Secretary: Bishop Roy H. Short, 810 Broadway, Nashville, Tenn.

Hobart Amstutz; Singapore, Malaya.
 Sante Uberto Barbieri; Buenos Aires.
 Newell S. Booth; Elisabethville, Bel. Congo.
 J. W. E. Bowen; Atlanta, Ga.
 John W. Branscomb; Jacksonville, Fla.
 Charles W. Brashares; Chicago, Ill.
 W. Y. Chen, China.
 Matthew W. Clair, Jr.; St. Louis, Mo.
 D. Stanley Coors; St. Paul, Minn.
 Fred P. Corson; Philadelphia, Pa.
 Dana Dawson; Topeka, Kans.
 Ralph E. Dodge; Rusape, Southern Rhodesia.
 F. Gerald Ensley; Des Moines, Iowa.
 Eugene M. Frank; St. Louis, Mo.
 Marvin A. Franklin; Jackson, Miss.
 Paul N. Garber; Richmond, Va.
 A. Raymond Grant; Portland, Oreg.
 Odd Hagen; Stockholm, Sweden.
 Nolan B. Harmon; Charlotte, N. C.
 Bachman G. Hodge; Birmingham, Ala.
 Z. T. Kaung; China.
 Gerald Kennedy; Los Angeles, Calif.
 Willis J. King; New Orleans, La.
 W. Earl Ledden; Syracuse, N. Y.
 John Wesley Lord; Boston, Mass.
 Edgar A. Love; Baltimore, Md.
 Paul E. Martin; Little Rock, Ark.

William C. Martin; Dallas, Tex.
 Shot K. Mondol; Delhi, India.
 Arthur J. Moore; Atlanta, Ga.
 Frederick B. Newell; New York, N. Y.
 H. Clifford Northcott; Madison, Wis.
 G. Bromley Oxnam; Washington, D. C.
 Glenn R. Phillips; Denver, Colo.
 Richard C. Raines; Indianapolis, Ind.
 Marshall R. Reed; Detroit, Mich.
 Clement D. Rockey; Lahore, Pakistan.
 Julio Manuel Sabanes; Santiago, Chile.
 Roy H. Short; Nashville, Tenn.
 Ferdinand Sigg, Zürich, Switzerland.
 Mangal Singh; Bombay, India.
 A. Frank Smith; Houston, Tex.
 W. Angie Smith; Oklahoma City, Okla.
 John A. Subhan; Hyderabad, India.
 Gabriel Sundaram; Lucknow, India.
 Prince Albert Taylor; Monrovia, Liberia.
 Donald H. Tippet; San Francisco, Calif.
 José Valencia; Manila, Philippines.
 Edwin E. Voigt; Aberdeen, S. Dak.
 Ralph A. Ward; Hong Kong.
 William T. Watkins; Louisville, Ky.
 H. Bascom Watts; Lincoln, Nebr.
 Hazen G. Werner; Columbus, Ohio.
 Lloyd C. Wicke; Pittsburgh, Pa.
 Friedrich Wunderlich; Frankfurt, Germany.

Roman Catholic Hierarchy of the U. S.

Source: National Catholic Welfare Conference, Washington, D. C.

(Note: A—Auxiliary; C—Coadjutor. Archbishops are shown in boldface type, Bishops in lightface. An Archbishop heading a diocese is called an "Archbishop ad Personam"; i.e., he bears the personal title of Archbishop. The Apostolic Delegate to the U. S. is Archbishop Amleto Giovanni Cicognani.)

Archdioceses

- Baltimore, Md.: Francis P. Keough; Jerome D. Sebastian (A).
 Boston, Mass.: Richard J. Cushing; Eric F. MacKenzie (A); Jeremiah E. Minihan (A).
 Chicago, Ill.: Samuel Cardinal Stritch; Bernard J. Sheil (A); Wm. D. O'Brien (A); Raymond P. Hillinger (A).
 Cincinnati, Ohio: Karl J. Alter; Clarence G. Isenmann (A).
 Denver, Colo.: Urban J. Vehr.
 Detroit, Mich.: Edward Cardinal Mooney; A. M. Zaleski (A); H. E. Donnelly (A); J. A. Donovan (A).
 Dubuque, Iowa: Leo Binz; Henry P. Rohlman (C); George J. Bishop.
 Hartford, Conn.: Henry J. O'Brien; John F. Hackett (A).
 Indianapolis Ind.: Paul C. Schulte.
 Kansas City, Kans.: Edward J. Hunkeler.
 Los Angeles, Calif.: James Francis Cardinal McIntyre; Timothy Manning (A); Alden J. Bell (A).
 Louisville, Ky.: John A. Floersch; Charles G. Maloney (A).
 Milwaukee, Wis.: Albert G. Meyer; Roman R. Atkielski (A).
 Newark, N. J.: Thomas A. Boland; Martin W. Stanton (A); Walter Curtis (A).
 New Orleans, La.: Joseph F. Rummel; L. Abel Caillouet (A).
 New York, N. Y.: Francis Cardinal Spellman; Stephen J. Donahue (A); Joseph P. Donahue (A); Joseph F. Flannely (A); Fulton J. Sheen (A); Edward V. Dargin (A); Joseph M. Pernicone (A); Raymond A. Lane; Paul Yu Pin; James H. Griffith (A); William R. Arnold (A); Philip J. Furlong (A).
 Omaha, Nebr.: Gerald T. Bergan.
 Philadelphia, Pa.: John F. O'Hara, C.S.C.; Joseph C. McCormick (A); Joseph McShea (A); Joseph Mary Yuen Ching Ping (A).
 Portland, Oreg.: Edward D. Howard.
 St. Louis, Mo.: Joseph E. Ritter; Leo C. Byrne (A); Glennon P. Flavin (A).
 St. Paul, Minn.: William O. Brady.
 San Antonio, Tex.: Robert E. Lucey; Stephen A. Leven (A).
 San Francisco, Calif.: John J. Mitty; Hugh A. Donohoe (A); Merlin J. Gullfoyle (A).
 Santa Fe, N. Mex.: Edwin V. Byrne.
 Seattle, Wash.: Thomas A. Connolly; Thomas E. Gill (A).
 Washington, D. C.: Patrick A. O'Boyle; John M. McNamara (A); Philip M. Hannan (A); Michael J. Keyes, S.M.
- Dioceses**
- Alaska (vicariate): Francis D. Gleeson, S.J., Vicar Apostolic.
- Albany, N. Y.: William A. Scully; Edward J. Maginn (A).
 Alexandria, La.: Charles P. Greco.
 Altoona, Pa.: (Vacant)
 Amarillo, Tex.: Laurence J. FitzSimon.
 Atlanta, Ga.: Francis E. Hyland.
 Austin, Tex.: Louis J. Reicher.
 Bahamas (Vicariate): Paul L. Hagerty, O.S.B., Vicar Apostolic.
 Baker City, Oreg.: Francis P. Leipzig.
 Belleville, Ill.: Albert R. Zuroweste.
 Bismarck, N. Dak.: Hilary B. Hacker.
 Boise, Idaho: James J. Byrne.
 Bridgeport, Conn.: Lawrence J. Shehan.
 Brooklyn, N. Y.: Bryan J. McEntegart; Raymond Kearney (A); J. J. Bordman (A); Edmund J. Reilly (A).
 Buffalo, N. Y.: Joseph A. Burke; Leo R. Smith (A).
 Burlington, Vt.: R. F. Joyce.
 Camden, N. J.: Justin McCarthy.
 Caroline-Marshall Islands (vicariate): Vincent I. Kennally.
 Charleston, S. C.: John J. Russell.
 Cheyenne, Wyo.: Hubert M. Newell.
 Cleveland, Ohio: Edward F. Hoban; Floyd L. Begin (A); John J. Krol (A).
 Columbus, Ohio: (Vacant); Edward G. Hettinger (A).
 Corpus Christi, Tex.: Mariano S. Garriga; Adolph Marx (A).
 Covington, Ky.: William T. Mulloy.
 Crookston, Minn.: Francis J. Schenk.
 Dallas-Ft. Worth, Tex.: Thomas K. Gorman; Augustine Dangelmayr (A).
 Davenport, Iowa: Ralph L. Hayes.
 Des Moines, Iowa: Edward C. Daly, O.P.
 Dodge City, Kans.: John B. Franz.
 Duluth, Minn.: Thomas A. Welch; Laurence A. Glenn (A).
 El Paso, Tex.: Sidney M. Metzger.
 Erie, Pa.: John M. Gannon; Edward P. McManaman (A).
 Evansville, Ind.: Henry J. Grimmelsman.
 Fall River, Mass.: James L. Connolly.
 Fargo, N. Dak.: Aloysius J. Muench; Leo F. Dworschak (A).
 Fort Wayne, Ind.: Leo A. Pursley.
 Gallup, N. Mex.: Bernard T. Espelage, O.F.M.
 Galveston, Tex.: Wendelin J. Nold.
 Gary, Ind.: A. G. Grutka.
 Grand Island, Nebr.: John L. Paschang.
 Grand Rapids, Mich.: Allen J. Babcock.
 Great Falls, Mont.: William J. Condon.
 Green Bay, Wis.: Stanislaus V. Bona; John B. Grellinger (A).
 Greensburg, Pa.: Hugh L. Lamb.
 Guam (vicariate): Apollinaris W. Baumgartner, O.F.M. Cap., Vicar Apostolic.
 Harrisburg, Pa.: George L. Leech; Lawrence F. Schott (A).

- Helena, Mont.: Joseph M. Gilmore.
 Honolulu: J. J. Sweeney; J. J. Scanlan (A).
 Jamaica (Vicariate): John J. McEleney, S.J., Vicar Apostolic.
 Jefferson City, Mo.: Joseph H. Marling, C.P.S.
 Joliet, Ill.: Martin D. McNamara.
 Juneau, Alaska: Dermot O'Flanagan.
 Kansas City-St. Joseph, Mo.: John P. Cody.
 La Crosse, Wis.: John P. Treacy.
 Lafayette, Ind.: John G. Bennett; John J. Carberry (C).
 Lafayette, La.: Maurice Schexnayder.
 Lansing, Mich.: Joseph H. Albers.
 Lincoln, Nebr.: (Vacant); Jas. V. Casey (A).
 Little Rock, Ark.: Albert L. Fletcher.
 Madison, Wis.: William P. O'Connor.
 Manchester, N. H.: Matthew F. Brady.
 Marquette, Mich.: Thomas L. Noa.
 Mobile-Birmingham, Ala.: T. J. Toolen; Joseph A. Durick (A).
 Monterey-Fresno, Calif.: Aloysius J. Willinger, C.Ss.R.; Harry A. Clinch (A).
 Nashville, Tenn.: William L. Adrian.
 Natchez, Miss.: Richard O. Gerow; Joseph Brumini (A).
 Norwich, Conn.: Bernard J. Flanagan.
 Ogdensburg, N. Y.: J. J. Navagh.
 Oklahoma City-Tulsa, Okla.: Eugene J. McGuinness.
 Owensboro, Ky.: Francis R. Cotton.
 Paterson, N. J.: James A. McNulty.
 Peoria, Ill.: William E. Cousins.
 Pittsburgh, Pa.: John F. Dearden; Coleman F. Carroll (A).
 Ponce, P. R.: James E. McManus, C.SS.R.
 Portland, Maine: Daniel J. Feeney.
 Providence, R. I.: Russell J. McVinney.
 Pueblo, Colo.: Joseph C. Willing.
 Raleigh, N. C.: Vincent S. Waters; James J. Navagh (A).
 Rapid City, S. Dak.: William T. McCarty, C.Ss.R.
 Reno, Nev.: Robert J. Dwyer.
 Richmond, Va.: Peter L. Ireton; Joseph H. Hodges (A).
 Rochester, N. Y.: James E. Kearney; Lawrence B. Casey (A).
 Rockford, Ill.: Lorus T. Lane.
 Rockville Center, N. Y.: Walter P. Kellenberg.
 Sacramento, Calif.: Joseph T. McGucken.
 Saginaw, Mich.: Stephen S. Woznicki.
 St. Augustine, Fla.: Joseph P. Hurley.
 St. Cloud, Minn.: Peter W. Bartholome.
 Salina, Kans.: (Vacant)
 Salt Lake City, Utah: Duane G. Hunt; J. Lennox Federal (A).
 San Diego, Calif.: Charles F. Buddy; Richard H. Ackerman (A).
 San Juan, P. R.: James P. Davis.
 Savannah, Ga.: Gerald P. O'Hara; Thomas J. McDonough (A).
 Scranton, Pa.: Jerome D. Hannan; Henry T. Klonowski (A).
 Sioux City, Iowa: Joseph M. Mueller.
 Sioux Falls, S. Dak.: Lambert A. Hoch.
 Spokane, Wash.: Bernard Joseph Topel.
 Springfield, Ill.: William A. O'Connor.
 Springfield, Mass.: Christopher J. Weldon.
 Springfield-Cape Girardeau, Mo.: Charles M. Helmsing.
 Steubenville, Ohio: John K. Mussio.
 Superior, Wis.: Joseph J. Annabring.
 Syracuse, N. Y.: Walter A. Foery; David F. Cunningham (A).
 Toledo, Ohio: George J. Rehding.
 Trenton, N. J.: George W. Ahr.
 Tucson, Ariz.: Daniel J. Gercke; Francis J. Green (A).
 Wheeling, W. Va.: John J. Swint; Thomas J. McDonnell (C).
 Wichita, Kans.: Mark K. Carroll.
 Wilmington, Del.: Edmond J. Fitzmaurice; Hubert J. Cartwright (C).
 Winona, Minn.: Edward A. Fitzgerald.
 Worcester, Mass.: John J. Wright.
 Yakima, Wash.: Joseph P. Dougherty.
 Youngstown, Ohio: Emmet M. Walsh.
 Military Ordinariate: Francis Cardinal Spellman, Military Vicar; William Arnold, Military Delegate; Philip J. Furlong (A).
 Belmont, N. C. (Abbacy Nullius): Vincent G. Taylor, O.S.B. (Abbot).
 Philadelphia, Pa. (Byzantine Rite): Constantine Bohachevsky; Joseph Schmon-diuk (A).
 Pittsburgh, Pa. (Greek Rite): Nicholas T. Elko; Stephen Kocisko (A).
 Stamford, Conn. (Ukrainian Greek Catholic Diocese): Ambrose Senyshyn.

The College of Cardinals

Cardinal Bishops

Year of creation	Name	Office or dignity	Nationality
1936	Eugene Tisserant	Bishop of Ostia, Porto, and Santa Rufina; Dean of the Sacred College of Cardinals; Secretary of the Sacred Congregation for the Oriental Church; Prefect of the Sacred Congregation of Ceremonies	French
1946	Clemente Micara	Bishop of Velletri; Vicar General of Rome	Italian

1937	Giuseppe Pizzardo	Bishop of Albano; Secretary of the Supreme Sacred Congregation of the Holy Office; Prefect of the Sacred Congregation of Seminaries and Universities	Italian
1946	Benedetto Aloisi Masella	Bishop of Palestrina; Prefect of the Sacred Congregation of the Sacraments; Archpriest of St. John Lateran's Basilica	Italian
1937	Adeodato Giovanni Piazza, O. C. D.	Bishop of Sabina; Secretary of the Sacred Consistorial Congregation	Italian
1933	Federico Tedeschini	Bishop of Frascati; Archpriest of St. Peter's Basilica; Prefect of the Sacred Congregation of the Basilica of St. Peter; Apostolic Datary	Italian

Cardinal Priests

1925	Alessandro Verde	Archpriest of Liberian Patriarchal Basilica of St. Mary Major	Italian
1927	Joseph Ernest Van Roey	Archbishop of Malines	Belgian
1929	Emanuel Goncalves Cerejeira	Patriarch of Lisbon	Portuguese
1930	Achilles Lienart	Bishop of Lille	French
1933	Pietro Fumasoni-Biondi	Prefect of the Sacred Congregation for the Propagation of the Faith	Italian
1933	Maurilio Fossati	Archbishop of Turin	Italian
1933	Elia dalla Costa	Archbishop of Florence	Italian
1935	Ignazio Tappouni	Syrian Patriarch of Antioch	Iraqian
1935	Santiago Copello	Archbishop of Buenos Aires	Argentine
1937	Pierre Marie Gerlier	Archbishop of Lyon	French
1946	Gregory Peter XV Agagianian	Patriarch of Cilicia of the Armenians	Trans-caucasian
1946	Edward Mooney	Archbishop of Detroit	American
1946	James McGuigan	Archbishop of Toronto	Canadian
1946	Samuel A. Stritch	Archbishop of Chicago	American
1946	Emile Roques	Archbishop of Rennes	French
1946	Carlo Carmelo de Vasconcellos Mota	Archbishop of São Paulo	Brazilian
1946	Norman Gilroy	Archbishop of Sydney	Australian
1946	Francis J. Spellman	Archbishop of New York	American
1946	José María Caro Rodríguez	Archbishop of Santiago	Chilean
1946	Teodosio Clemente de Gouveia	Archbishop of Lourenço Marques, Mozambique	Portuguese
1946	Jaime de Barros Camara	Archbishop of Rio de Janeiro; Ordinary for Oriental Catholics in Brazil	Brazilian
1946	Enrique Pla y Deniel	Archbishop of Toledo and Primate of Spain	Spanish
1946	Manuel Arteaga y Betancourt	Archbishop of Havana	Cuban
1946	Joseph Frings	Archbishop of Cologne	German
1946	Jozsef Mindszenty	Archbishop of Esztergom and Primate of Hungary	Hungarian
1946	Ernesto Ruffini	Archbishop of Palermo; Apostolic Administrator of the Byzantium Rite Eparchy of Piani Dei Greci	Italian
1946	Antonio Caggiano	Bishop of Rosario	Argentine
1946	Thomas Tien, S. V. D.	Archbishop of Peiping	Chinese
1953	Celso Costantini	Secretary of the Sacred Congregation for the Propagation of the Faith; Chancellor of the Holy Roman Church	Italian
1953	Augusto Alvaro da Silva	Archbishop of San Salvador in Balta	Brazilian

1953	Gaetano Cicognani	Prefect of Sacred Congregation of Rites; Pro-Prefect of the Apostolic Signature	Italian
1953	Angelo G. Roncalli	Patriarch of Venice	Italian
1953	Valerio Valeri	Prefect of Sacred Congregation of Affairs of Religious	Italian
1953	Pietro Ciriaci	Prefect of Sacred Congregation of the Council	Italian
1953	Maurice Feltin	Archbishop of Paris	French
1953	Marcello Mimmi	Archbishop of Naples	Italian
1953	Carlos Maria de la Torre	Archbishop of Quito	Ecuadorian
1953	Aloysius Stepinac	Archbishop of Zagreb	Yugoslavian
1953	Georges F. X. M. Grente	Archbishop <i>ad personam</i> of Le Mans	French
1953	Giuseppe Siri	Archbishop of Genoa	Italian
1953	John F. D'Alton	Archbishop of Armagh, Primate of all Ireland	Irish
1953	James Francis McIntyre	Archbishop of Los Angeles	American
1953	Giacomo Lercaro	Archbishop of Bologna	Italian
1953	Stefan Wyszyński	Archbishop of Gniezno and Warsaw	Polish
1953	Benjamin de Arriba y Castro	Archbishop of Tarragona	Spanish
1953	Fernando Quiroga y Palacios	Archbishop of Santiago di Compostela	Spanish
1953	Paul Émile Leger, S.S.	Archbishop of Montreal	Canadian
1953	Crisanto Luque	Archbishop of Bogotá, Primate of Colombia	Colombian
1953	Valerian Gracias	Archbishop of Bombay	Indian
1953	Josef Wendel	Archbishop of Munich and Freising	German

Cardinal Deacons

1935	Nicola Canali	Grand Penitentiary; President of the Commission charged with the Administration of Vatican City	Italian
1953	Alfredo Ottaviani	Pro-Secretary of the Supreme Congregation of the Holy Office	Italian

Antipopes

Antipopes were those who falsely claimed Papal Sovereignty. The dates and, in some cases, Roman numerals after the names account for occasional discrepancies in the succession of the Popes.

Name	Birthplace	Access.	End of reign	Name	Birthplace	Access.	End of reign
St. Hippolytus	Rome	217	235	Clement III	Parma	1080	1100
Novatian	Rome	251	...	Theodoric	.....	....	1100
Felix II	Rome	355	365	Albert	.....	....	1102
Ursinus	.....	366	367	Sylvester IV	Rome	1105	1111
Eulalius	.....	418	419	Gregory VIII	France	1118	1121
Lawrence	.....	498	501	Celestine II	Rome	....	1124
Dioscorus	Alexandria	530	530	Anacletus II	Rome	1130	1138
Theodore	.....	...	687	Victor IV	.....	1138	1138
Paschal	.....	...	687	Victor IV*	Montecello	1159	1164
Constantine	Nepi	767	769	Paschal III	.....	1164	1168
Philip	.....	768	768	Callistus III	Arezzo	1168	1178
John	.....	...	844	Innocent III	Sezze	1179	1180
Anastasius	.....	855	855	Nicholas V	Corvaro	1328	1330
Christopher	Rome	903	904	Clement VII	.....	1378	1394
Boniface VII	Rome	974	974	Benedict XIII	Aragon	1394	1423
Boniface VII	.....	984	985	Alexander V	Crete	1409	1410
(2nd time)				John XXIII	Naples	1410	1415
John XVI	Rossano	997	998	Felix V	.....	1439	1449
Gregory	.....	...	1012				
Benedict X	Rome	1058	1059				
Honorius II	Verona	1061	1072				

* Did not recognize his predecessor of 1138, who, only two months after claiming the Papacy, submitted to the rightful Pope, Innocent II.

Roman Catholic Pontiffs

Source for Catholic information: The National Catholic Almanac.

St. Peter, of Bethsaida in Galilee, Prince of the Apostles, was the first Pope. He resided first in Antioch and then for twenty-five years in Rome, where he suffered martyrdom in 64 or 67 of the modern era. He was followed by St. Linus.

Name	Birthplace	Access.	End of reign	Name	Birthplace	Access.	End of reign
St. Linus	Tuscia	67	76	Sabinianus	Tuscia	604	606
St. Anaclethus (Cletus)	Rome	76	88	Boniface III	Rome	607	607
St. Clement	Rome	88	97	St. Boniface IV	Marsi	608	615
St. Evaristus	Greece	97	105	St. Deusdedit (Adeodatus I)	Rome	615	618
St. Alexander I	Rome	105	115	Boniface V	Naples	619	625
St. Sixtus I	Rome	115	125	Honorius I	Campania	625	638
St. Telesphorus	Greece	125	136	Severinus	Rome	640	640
St. Hyginus	Greece	136	140	John IV	Dalmatia	640	642
St. Pius I	Aquileia	140	155	Theodore I	Greece	642	649
St. Anicetus	Syria	155	166	St. Martin I	Todi	649	655
St. Soter	Campania	166	175	St. Eugenius I	Rome	654	657
St. Eleutherius	Epirus	175	189	St. Vitalian	Segni	657	672
St. Victor I	Africa	189	199	Adeodatus II	Rome	672	676
St. Zephyrinus	Rome	199	217	Donus	Rome	676	678
St. Callistus I	Rome	217	222	St. Agatho	Sicily	678	681
St. Urban I	Rome	222	230	St. Leo II	Sicily	682	683
St. Pontian	Rome	230	235	St. Benedict II	Rome	684	685
St. Anterus	Greece	235	236	John V	Syria	685	686
St. Fabian	Rome	236	250	Conon	Unknown	686	687
St. Cornelius	Rome	251	253	St. Sergius I	Syria	687	701
St. Lucius I	Rome	253	254	John VI	Greece	701	705
St. Stephen I	Rome	254	257	John VII	Greece	705	707
St. Sixtus II	Greece	257	258	Sisinnius	Syria	708	708
St. Dionysius	Unknown	259	268	Constantine	Syria	708	715
St. Felix I	Rome	269	274	St. Gregory II	Rome	715	731
St. Eutychian	Luni	275	283	St. Gregory III	Syria	731	741
St. Calus	Dalmatia	283	296	St. Zachary	Greece	741	752
St. Marcellinus	Rome	296	304	Stephen II	Rome	752	752
St. Marcellus I	Rome	308	309	Stephen III	Rome	752	757
St. Eusebius	Greece	309	309	St. Paul I	Rome	757	767
St. Melchlaides	Africa	311	314	Stephen IV	Sicily	768	772
St. Sylvester I	Rome	314	335	Adrian I	Rome	772	795
St. Marcus	Rome	336	336	St. Leo III	Rome	795	816
St. Julius I	Rome	337	352	Stephen V	Rome	816	817
St. Liberius	Rome	352	366	St. Paschal I	Rome	817	824
St. Damasus I	Spain	366	384	Eugenius II	Rome	824	827
St. Siricius	Rome	384	399	Valentine	Rome	827	827
St. Anastasius I	Rome	399	401	Gregory IV	Rome	827	844
St. Innocent I	Albano	401	417	Sergius II	Rome	844	847
St. Zozimus	Greece	417	418	St. Leo IV	Rome	847	855
St. Boniface I	Rome	418	422	Benedict III	Rome	855	858
St. Celestine I	Campania	422	432	St. Nicholas	Rome	858	867
St. Sixtus III	Rome	432	440	Adrian II	Rome	867	872
St. Leo I (the Great)	Tuscia	440	461	John VIII	Rome	872	882
St. Hilary	Sardo	461	468	Marinus I	Gallese	882	884
St. Simplicius	Tivoli	468	483	St. Adrian III	Rome	884	885
St. Felix III (II)	Rome	483	492	Stephen VI	Rome	885	891
St. Gelasius I	Africa	492	496	Formosus	Portus	891	896
Anastasius II	Rome	496	498	Boniface VI	Rome	896	896
St. Symmachus	Sardo	498	514	Stephen VII	Rome	896	897
St. Hormisdas	Frosinone	514	523	Romanus	Gallese	897	897
St. John I	Tuscia	523	526	Theodore II	Rome	897	897
St. Felix IV (III)	Sannio	526	530	John IX	Tivoli	898	900
Boniface II	Rome	530	532	Benedict IV	Rome	900	903
John II	Rome	533	535	Leo V	Ardea	903	903
St. Agapitus I	Rome	535	536	Sergius III	Rome	904	911
St. Silverius	Campania	536	537	Anastasius III	Rome	911	913
Vigilius	Rome	537	555	Landus	Sabina	913	914
Pelagius I	Rome	556	561	John X	Tossignano	914	928
John III	Rome	561	574	Leo VI	Rome	928	928
Benedict I	Rome	575	579	Stephen VIII	Rome	928	931
Pelagius II	Rome	579	590	John XI	Rome	931	935
St. Gregory I (the Great)	Rome	590	604	Leo VII	Rome	936	939
				Stephen IX	Rome	939	942
				Marinus II	Rome	942	946

Name	Birthplace	Accession	End of reign	Name	Birthplace	Accession	End of reign
Agapitus II	Rome	946	955	Bl. Benedict XI	Treviso	1303	1304
John XII	Tusculum	955	964	Clement V	France	1305	1314
Leo VIII	Rome	963	965	John XXII	Cahors	1316	1334
Benedict V	Rome	964	966	Benedict XII	France	1334	1342
John XIII	Rome	965	972	Clement VI	France	1342	1352
Benedict VI	Rome	973	974	Innocent VI	France	1352	1362
Benedict VII	Rome	974	983	Bl. Urban V	France	1362	1370
John XIV	Pavia	983	984	Gregory XI	France	1370	1378
John XV	Rome	985	996	Urban VI	Naples	1378	1389
Gregory V	Saxony	996	999	Boniface IX	Naples	1389	1404
Sylvester II	Alvernia	999	1003	Innocent VII	Sulmona	1404	1406
John XVII	Rome	1003	1003	Gregory XII	Venetia	1406	1415
John XVIII	Rome	1004	1009	Martin V	Rome	1417	1431
Sergius IV	Rome	1009	1012	Eugene IV	Venetia	1431	1447
Benedict VIII	Tusculum	1012	1024	Nicholas V	Sarzana	1447	1455
John XIX	Tusculum	1024	1032	Callistus III	Valencia	1455	1458
Benedict IX*	Tusculum	1032	1044	Pius II	Siena	1458	1464
Sylvester III	Rome	1045	1045	Paul II	Venetia	1464	1471
Benedict IX (2nd time)	....	1045	1045	Sixtus IV	Savona	1471	1484
Gregory VI	Rome	1045	1046	Innocent VIII	Genoa	1484	1492
Clement II	Saxony	1046	1047	Alexander VI	Valencia	1492	1503
Benedict IX (3rd time)	....	1047	1048	Pius III	Siena	1503	1503
Damasus II	Bavaria	1048	1048	Julius II	Savona	1503	1513
St. Leo IX	Egisheim-Dagsburg	1049	1054	Leo X	Florence	1513	1521
Victor II	Dollnstein-Hirschberg	1055	1057	Adrian VI	Utrecht	1522	1523
Stephen X	Lorraine	1057	1058	Clement VII	Florence	1523	1534
Nicholas II	Burgundy	1059	1061	Paul III	Rome	1534	1549
Alexander II	Milan	1061	1073	Julius III	Rome	1550	1555
St. Gregory VII	Tuscia	1073	1085	Marcellus II	Montepulciano	1555	1555
Bl. Victor III	Benevento	1086	1087	Paul IV	Naples	1555	1559
Bl. Urban II	France	1088	1099	Pius IV	Milan	1559	1565
Paschal II	Ravenna	1099	1118	St. Pius V	Bosco	1566	1572
Gelasius II	Gaeta	1118	1119	Gregory XIII	Bologna	1572	1585
Callistus II	Burgundy	1119	1124	Sixtus V	Grottammare	1585	1590
Honorius II	Flagnano	1124	1130	Urban VII	Rome	1590	1590
Innocent II	Rome	1130	1143	Gregory XIV	Cremona	1590	1591
Celestine II	Città di Castello	1143	1144	Innocent IX	Bologna	1591	1591
Lucius II	Bologna	1144	1145	Clement VIII	Florence	1592	1605
Bl. Eugene III	Pisa	1145	1153	Leo XI	Florence	1605	1605
Anastasius IV	Rome	1153	1154	Paul V	Rome	1605	1621
Adrian IV	England	1154	1159	Gregory XV	Bologna	1621	1623
Alexander III	Siena	1159	1181	Urban VIII	Florence	1623	1644
Lucius III	Lucca	1181	1185	Innocent X	Rome	1644	1655
Urban III	Milan	1185	1187	Alexander VII	Siena	1655	1667
Gregory VIII	Benevento	1187	1187	Clement IX	Pistola	1667	1669
Clement III	Rome	1187	1191	Clement X	Rome	1670	1676
Celestine III	Rome	1191	1193	Innocent XI	Como	1676	1689
Innocent III	Anagni	1198	1216	Alexander VIII	Venetia	1689	1691
Honorius III	Rome	1216	1227	Innocent XII	Naples	1691	1700
Gregory IX	Anagni	1227	1241	Clement XI	Urbino	1700	1721
Celestine IV	Milan	1241	1241	Innocent XIII	Rome	1721	1724
Innocent IV	Genoa	1243	1254	Benedict XIII	Rome	1724	1730
Alexander IV	Anagni	1254	1261	Clement XII	Florence	1730	1740
Urban IV	Troyes	1261	1264	Benedict XIV	Bologna	1740	1758
Clement IV	France	1265	1268	Clement XIII	Venetia	1758	1769
Bl. Gregory X	Piacenza	1271	1276	Clement XIV	Rimini	1769	1774
Bl. Innocent V	Savoy	1276	1276	Pius VI	Cesena	1775	1799
Adrian V	Genoa	1276	1276	Pius VII	Cesena	1800	1823
John XXI	Portugal	1276	1277	Leo XII	Fabriano	1823	1829
Nicholas III	Rome	1277	1280	Pius VIII	Cingoli	1829	1830
Martin IV	France	1281	1285	Gregory XVI	Belluno	1831	1846
Honorius IV	Rome	1285	1287	Pius IX	Senigallia	1846	1878
Nicholas IV	Ascoli	1288	1292	Leo XIII	Carpineto	1878	1903
St. Celestine V	Isernia	1294	1294	St. Pius X	Riese	1903	1914
Boniface VIII	Anagni	1294	1303	Benedict XV	Genoa	1914	1922
				Pius XI	Desio	1922	1939
				Pius XII	Rome	1939	

* If the triple removal of Benedict IX was not valid, Sylvester III, Gregory VI and Clement II were antipopes.
NOTE: This list of Popes, adapted from the *Annuario Pontificio*, is in accordance with the recent revisions made by Monsignor Mercati, Prefect of the Vatican's archives. All Popes before Sylvester I are listed as martyrs; other martyrs were: St. John I, St. Silverius and St. Martin I. The accession year is that during which the Pope was elected.

Archbishops of Canterbury

Sequence	Name	Created	Sequence	Name	Created
1	Augustine (consecrated Bishop 597)	601	50	Robert Winchelsea	1294
2	Laurentius	604	51	Walter Reynolds	1313
3	Mellitus	619	52	Simon Mepeham	1328
4	Justus	624	53	John de Stratford	1333
5	Honorius	627	54	Thomas Bradwardine	1349
6	Deusdedit	655	55	Simon Islip	1349
7	Theodorus	668	56	Simon Langham	1366
8	Beorhtweald	692	57	William Whittlesey	1368
9	Tatwine	731	58	Simon of Sudbury	1375
10	Nothelm	735	59	William Courtenay	1381
11	Cuthbeorht	740	60	Thomas Arundel	1396
12	Breguwine	761	61	Roger Walden	1398
13	Jaenbeorht	765	62	Thomas Arundel (restored)	1399
14	Æthelheard	793	63	Henry Chicheley	1414
15	Wulfred	805	64	John Stafford	1443
16	Feologild	832	65	John Kemp	1452
17	Ceolnoth	833	66	Thomas Bourchier	1454
18	Æthelred	870	67	John Morton	1486
19	Plegmund	890	68	Henry Dean	1501
20	Æthelhelm	914	69	William Warham	1503
21	Wulfhelm	923	70	Thomas Cranmer	1533
22	Oda	942	71	Reginald Pole	1556
23	Ælfsige	959	72	Matthew Parker	1559
24	Beorhtelm	959	73	Edmund Grindal	1576
25	Dunstan	959	74	John Whitgift	1583
26	Æthelgar	988	75	Richard Bancroft	1604
27	Sigeric Serlo	990	76	George Abbot	1611
28	Ælfric	995	77	William Laud	1633
29	Ælfheah	1005	78	William Juxon	1660
30	Lyfing	1013	79	Gilbert Sheldon	1663
31	Æthelnoth	1020	80	William Sancroft	1678
32	Eadsige	1038	81	John Tillotson	1691
33	Robert (Champart) of Jumièges	1051	82	Thomas Tenison	1695
34	Stigand	1052	83	William Wake	1716
35	Lanfranc	1070	84	John Potter	1737
36	Anselm	1093	85	Thomas Herring	1747
37	Ralph d'Escures	1114	86	Matthew Hutton	1757
38	William de Corbell	1123	87	Thomas Secker	1758
39	Theobald	1138	88	Frederick Cornwallis	1768
40	Thomas à Becket	1162	89	John Moore	1783
41	Richard (of Dover)	1174	90	Charles Manners-Sutton	1805
42	Baldwin	1185	91	William Howley	1828
43	Hubert Walter	1193	92	John Bird Sumner	1848
44	Stephen Langton	1207	93	Charles Thomas Longley	1862
45	Richard le Grant (of Wetharshed)	1229	94	Archibald Campbell Tait	1868
46	Edmund Rich	1234	95	Edward White Benson	1883
47	Boniface of Savoy	1245	96	Frederick Temple	1896
48	Robert Kilwardby	1273	97	Randall Thomas Davidson	1903
49	John Pecham (Peckham)	1279	98	Cosmo Gordon Lang	1928
			99	William Temple	1942
			100	Geoffrey Francis Fisher	1945

(NOTE: Anglicans consider the line of Archbishops unbroken from Augustine to the present day. Roman Catholics consider the office vacant since 1558, the death of Pole.)

History of the Christian Church in England

5th century	Arrival in England of Angles, Saxons and Jutes. Church isolated from Rome.	1646	Puritan rebellion. Presbyterianism becomes state religion.
597	Augustine sent to convert Saxons.	1660	Restoration. Power of Church of England restored under Charles II.
1534	Act of Supremacy makes king head of Church of England.	1739	John Wesley founds Methodism.
1554	Church again united with Rome under reign of Mary.	1829	Catholic emancipation.
1558	Church restored to Crown at accession of Elizabeth.	1833-45	Oxford Movement attempts to bring Church of England closer to ideals of ancient Church. This movement continues as important influence.
1611	King James version of Bible.		

Jewish Congregational and Rabbinical Organizations

Central Conference of American Rabbis:
40 W. 68th St., New York 23, N. Y.
Rabbinical Alliance of America: 141 So. 3rd
St., Brooklyn 11, N. Y.
Rabbinical Assembly of America: 3080
Broadway, New York 27, N. Y.
Rabbinical Council of America, Inc.: 331
Madison Ave., New York 17, N. Y.
Synagogue Council of America: 110 W.
42nd St., New York 36, N. Y.

Union of American Hebrew Congregations:
838 Fifth Ave., New York 21, N. Y.

Union of Orthodox Rabbis of the U. S. and
Canada: 132 Nassau St., New York 38, N. Y.

Union of Orthodox Jewish Congregations
of America: 305 Bdwy., New York 7, N. Y.

United Synagogue of America: 3080 Broad-
way, New York 27, N. Y.

Religious and Secular Holidays, 1958

NEW YEAR'S DAY—Wednesday, Jan. 1—
A legal holiday in all states and the Dis-
trict of Columbia, New Year's Day has its
origin in Roman times, when sacrifices
were offered to Janus, the two-faced Ro-
man deity who looked back on the past
and forward to the future.

EPIPHANY—Monday, Jan. 6—Falls the
twelfth day after Christmas and com-
memorates the manifestation of Jesus as
the Son of God, as represented by the ado-
ration of the Magi, the baptism of Jesus,
and the miracle of the wine at the marriage
feast at Cana. Epiphany originally marked
the beginning of the carnival season pre-
ceding Lent, and the evening (sometimes
the eve) is known as Twelfth Night.

LINCOLN'S BIRTHDAY—Wednesday, Feb.
12—A legal holiday in many states, this
day was first formally observed in Wash-
ington, D. C., in 1866, when both houses of
Congress gathered for a memorial address
in honor of the late President.

ST. VALENTINE'S DAY—Friday, Feb.
14—This day is the festival of two 3rd-
century martyrs, both named St. Valen-
tine. It is not known why this day is
associated with lovers. It may derive from
an old pagan festival about this time of
year, or it may have been inspired by the
belief that birds mate on this day.

SHROVE TUESDAY—Feb. 18—Falls the
day before Ash Wednesday and marks the
end of the carnival season, which once
began on Epiphany but is now usually
celebrated the last three days before Lent.
In France, the day is known as Mardi Gras
(Fat Tuesday), and Mardi Gras celebra-
tions are also held in several American
cities, particularly in New Orleans. The
day is sometimes called Pancake Tuesday
by the English because of the need of
using up fats which were prohibited dur-
ing Lent.

ASH WEDNESDAY—Feb. 19—The first
day of the Lenten season, which lasts forty
days. Having its origin sometime before
A.D. 1000, it is a day of public penance and
is marked in the Roman Catholic Church
by the burning of the palms blessed on the
previous Palm Sunday. With his thumb,
the priest then marks a cross upon the

forehead of each worshipper. The Anglican
Church and a few Protestant groups in the
United States also celebrate the day, but
generally without the use of ashes.

WASHINGTON'S BIRTHDAY—Saturday,
Feb. 22—The birthday of George Wash-
ington is celebrated as a legal holiday in
every state of the Union, the District of
Columbia and all territories. The observ-
ance began in 1796.

ST. PATRICK'S DAY—Monday, March
17—St. Patrick, patron saint of Ireland,
has been honored in America since the
first days of the nation. There are many
dinners and meetings and perhaps the
most notable part of the observance is
the annual St. Patrick's Day parade on
Fifth Avenue in New York City.

PALM SUNDAY—March 30—Is observed
the Sunday before Easter to commemorate
the entry of Jesus into Jerusalem. The
procession and the ceremonies introducing
the benediction of palms probably had
their origin in Jerusalem.

GOOD FRIDAY—April 4—This day
commemorates the Crucifixion, which is
retold during services from the Gospel ac-
cording to St. John. A feature in Roman
Catholic churches is the Liturgy of the
Passion; there is no Consecration, the
Host having been consecrated the previous
day. The eating of hot cross buns on this
day is said to have started in England.

FIRST DAY OF PASSOVER (Pesach)—
Saturday, Apr. 5 (Nisan 15)—The Feast
of the Passover, also called the Feast of
Unleavened Bread, commemorates the es-
cape of the first-born of the Jews from
the Angel of Death, who took from the
Egyptians their first-born, thus fulfilling
the prophecy of Moses. As the Jews fled
Egypt, they ate unleavened bread, and
from that time the Jews have allowed no
leavening in the houses during Passover,
bread being replaced by matzoth.

EASTER SUNDAY—April 6—Observed
in all Christian churches, Easter com-
memorates the Resurrection of Jesus. It
is celebrated on the first Sunday after the
full moon which occurs on or next after
March 21 and is therefore celebrated be-

tween March 22 and April 25 inclusive. This date was fixed by the Council of Nicaea in 325.

ASCENSION DAY—Thursday, May 15—Took place in the presence of His apostles 40 days after the Resurrection of Jesus. It is traditionally held to have occurred on Mount Olivet in Bethany.

FIRST DAY OF SHABUOTH (Hebrew Pentecost)—Sunday, May 25 (Sivan 6)—This festival, sometimes called the Feast of Weeks, or of Harvest, or of the First Fruits, falls fifty days after Passover and originally celebrated the end of the seven-week grain harvesting season. In later tradition, it also celebrated the giving of the Law to Moses on Mt. Sinai, and both aspects have come down to the present.

PENTECOST (Whitsunday)—May 25—This day commemorates the descent of the Holy Ghost upon the Apostles fifty days after the Resurrection. The sermon by the Apostle Peter, which led to the baptism of 3,000 who professed belief, originated the ceremonies that have since been followed. "Whitsunday" is believed to have come from "white Sunday" when, among the English, white robes were worn by those baptized on the day.

MEMORIAL DAY—Friday, May 30—Also known as Decoration Day, Memorial Day is a legal holiday in most of the states and in the territories, and is also observed by the armed forces. In 1868, General John A. Logan, Commander in Chief of the Grand Army of the Republic, issued an order designating the day as one in which the graves of soldiers would be decorated. The holiday was originally devoted to honoring the memory of those who fell in the Civil War, but is now also dedicated to the memory of the dead of all wars.

FLAG DAY—Saturday, June 14—This day commemorates the adoption by the Continental Congress on June 14, 1777, of the Stars and Stripes as the U. S. flag. Although it is a legal holiday only in Pennsylvania, President Truman, on Aug. 3, 1949, signed a bill requesting the President to call for its observance each year by proclamation.

INDEPENDENCE DAY—Friday, July 4—The day of the adoption of the Declaration of Independence in 1776, celebrated in all states and territories. The observance began in the next year in the city of Philadelphia.

LABOR DAY—Monday, Sept. 1—Observed the first Monday in September in all states and territories. Labor Day was first celebrated in New York in 1882 under the sponsorship of the Central Labor Union, following the suggestion of Peter J. McGuire, of the Knights of Labor, that the day be set aside in honor of labor.

FIRST DAY OF ROSH HASHANA (Jewish New Year)—Monday, Sept. 15 (Tishri 1)—This day marks the beginning of the Jewish year 5718 and opens the Ten Days of Penitence closing with Yom Kippur.

YOM KIPPUR (Day of Atonement)—Wednesday, Sept. 24 (Tishri 10)—This day marks the end of the Ten Days of Penitence that began with Rosh Hashana and is the holiest day of the Jewish year. It is described in *Leviticus* as the "Sabbath of Sabbaths," and synagogue services begin the preceding sundown, resume the following morning, and continue through the day to sundown.

FIRST DAY OF SUKKOTH (Feast of Tabernacles)—Monday, Sept. 29 (Tishri 15)—This festival, also known as the Feast of the Ingathering, originally celebrated the fruit harvest, and the name comes from the booths or tabernacles in which the Jews lived during the harvest, although one tradition traces it to the shelters used by the Jews in their wandering through the wilderness. During the festival, many Jews build small huts in their back yards or on the roofs of their houses.

COLUMBUS DAY—Sunday, Oct. 12—A legal holiday in many states, commemorating the discovery of America by Columbus in 1492. Quite likely the first celebration of Columbus Day was that organized in 1792 by the Society of St. Tammany, or Columbian Order, more widely known as Tammany Hall.

ELECTION DAY (in certain states)—Tuesday, Nov. 4—Since 1845, by Act of Congress, the first Tuesday after the first Monday in November is the date for choosing Presidential electors. State elections are also generally held on this day.

VETERANS DAY—Tuesday, Nov. 11—Armistice Day was established in 1926 to commemorate the signing in 1918 of the Armistice ending World War I. On June 1, 1954, the name was changed to Veterans Day so as to honor all men and women who have served America in its armed forces.

THANKSGIVING—Thursday, Nov. 27—Observed nationally on the fourth Thursday in November by Act of Congress (1941), the first such national proclamation having been issued by President Lincoln in 1863, on the urging of Mrs. Sarah J. Hale, editor of *Godey's Lady's Book*. Most Americans believe that the holiday dates back to the day of thanks ordered by Governor Bradford of Plymouth Colony in New England in 1621 but scholars point out that days of thanks stem from ancient times.

FIRST SUNDAY OF ADVENT—Nov. 30—Advent is the season in which the faithful must prepare themselves for the advent of the Saviour on Christmas. The four Sun-

days before Christmas are marked by special church services.

FIRST DAY OF HANUKKAH (Festival of Lights)—Sunday, Dec. 7 (Kislev 25)—This festival was instituted by Judas Maccabaeus in 165 B.C. to celebrate the purification of the Temple of Jerusalem, which had been desecrated three years earlier by Antiochus Epiphanes, who set up a pagan altar and offered sacrifices to Zeus Olympus. In Jewish homes, a light is lighted the first night, and on each succeeding night of the eight-day festival, another is lighted.

CHRISTMAS (Feast of the Nativity)—Thursday, Dec. 25—The most widely cele-

brated holiday of the Christian year, Christmas is observed as the anniversary of the birth of Jesus. Christmas customs are centuries old. The mistletoe, for example, comes from the Druids, who, in hanging the mistletoe, hoped for peace and good fortune. Use of such plants as holly comes from the ancient belief that such plants blossomed at Christmas. Comparatively recent is the Christmas tree, first set up in Germany in the 17th century, and the use of candles on trees developed from the belief that candles appeared by miracle on the trees at Christmas. Colonial Manhattan Islanders introduced the name Santa Claus, a corruption of the Dutch name for the 4th-century Asia-Minor St. Nicholas.

Movable Holidays, 1958 to 1967

CHRISTIAN AND SECULAR

Year	Ash Wed.	Easter	Pentecost	Labor Day	Election Day	Thanksgiving	1st Sun. Advent
1958	Feb. 19	Apr. 6	May 25	Sept. 1	Nov. 4	Nov. 27	Nov. 30
1959	Feb. 11	Mar. 29	May 17	Sept. 7	Nov. 3	Nov. 26	Nov. 29
1960	Mar. 2	Apr. 17	June 5	Sept. 5	Nov. 8	Nov. 24	Nov. 27
1961	Feb. 15	Apr. 2	May 21	Sept. 4	Nov. 7	Nov. 23	Dec. 3
1962	Mar. 7	Apr. 22	June 10	Sept. 3	Nov. 6	Nov. 22	Dec. 2
1963	Feb. 27	Apr. 14	June 2	Sept. 2	Nov. 5	Nov. 28	Dec. 1
1964	Feb. 12	Mar. 29	May 17	Sept. 7	Nov. 3	Nov. 26	Nov. 29
1965	Mar. 3	Apr. 18	June 6	Sept. 6	Nov. 2	Nov. 25	Nov. 28
1966	Feb. 23	Apr. 10	May 29	Sept. 5	Nov. 8	Nov. 24	Nov. 27
1967	Feb. 8	Mar. 26	May 14	Sept. 4	Nov. 7	Nov. 23	Dec. 3

Shrove Tuesday: 1 day before Ash Wednesday.

Palm Sunday: 7 days before Easter.

Maundy Thursday: 3 days before Easter.

Good Friday: 2 days before Easter.

Holy Saturday: 1 day before Easter.

Ascension Day: 10 days before Pentecost.

Trinity Sunday: 7 days after Pentecost.

Corpus Christi: 11 days after Pentecost.

JEWISH

Year	Purim	1st day Passover	1st day Shabuoth	1st day Rosh Hashana	Yom Kippur	1st Day Sukkoth	Simhath Torah	1st Day Hanukkah
1958	Mar. 6	Apr. 5	May 25	Sept. 15	Sept. 24	Sept. 29	Oct. 7	Dec. 7
1959	Mar. 24	Apr. 23	June 12	Oct. 3	Oct. 12	Oct. 17	Oct. 25	Dec. 26
1960	Mar. 13	Apr. 12	June 1	Sept. 22	Oct. 1	Oct. 6	Oct. 14	Dec. 14
1961	Mar. 2	Apr. 1	May 21	Sept. 11	Sept. 20	Sept. 25	Oct. 3	Dec. 3
1962	Mar. 20	Apr. 19	June 8	Sept. 29	Oct. 8	Oct. 13	Oct. 21	Dec. 22
1963	Mar. 10	Apr. 9	May 29	Sept. 19	Sept. 28	Oct. 3	Oct. 11	Dec. 11
1964	Feb. 27	Mar. 28	May 17	Sept. 7	Sept. 16	Sept. 21	Sept. 29	Nov. 30
1965	Mar. 18	Apr. 17	June 6	Sept. 27	Oct. 6	Oct. 11	Oct. 19	Dec. 19
1966	Mar. 6	Apr. 5	May 25	Sept. 15	Sept. 24	Sept. 29	Oct. 7	Dec. 8
1967	Mar. 26	Apr. 25	June 14	Oct. 5	Oct. 14	Oct. 19	Oct. 27	Dec. 27

Length of Jewish holidays (O=Orthodox, C=Conservative, R=Reform):

Passover: O & C, 8 days (holy days: first 2 and last 2); R, 7 days (holy days: first and last).

Shabuoth: O & C, 2 days; R, 1 day.

Rosh Hashana: O & C, 2 days; R, 1 day.

Yom Kippur: All groups, 1 day.

Sukkoth: All groups, 7 days (holy days: O & C, first 2; R, first only). O & C observe two additional days: Shemini

Atsereth (Eighth Day of the Feast) and Simhath Torah (Rejoicing of the Law). R observes Shemini Atsereth but not Simhath Torah.

Hanukkah: All groups, 8 days.

NOTE: All holidays begin at sundown on the evening before the date given.

Legal Holidays in the United States, Alaska, Hawaii & Puerto Rico

Holidays Widely Observed

January 1, New Year's Day: All states, D. C., Alaska, Hawaii, Puerto Rico.

February 12, Lincoln's Birthday: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Minnesota, Montana, Nebraska, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming, Alaska.

February 22, Washington's Birthday: All states, D. C., Alaska, Hawaii, Puerto Rico.

May 30, Memorial (or Decoration) Day: All states (except Alabama, Georgia, Mississippi, South Carolina, Texas), D. C., Alaska, Hawaii, Puerto Rico.

July 4, Independence Day: All states, D. C., Alaska, Hawaii, Puerto Rico.

September (1st Monday), Labor Day: All states, D. C., Alaska, Hawaii, Puerto Rico.

October 12, Columbus Day: All states (except Arkansas, D. C., Idaho, Iowa, Maine, Mississippi, Missouri, North Carolina, Oregon, South Carolina, South Dakota, Tennessee, Virginia, Wyoming), Puerto Rico.

November (1st Tuesday after 1st Monday), Election Day: Arizona, California, Colorado, Delaware, Florida, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Missouri, Montana, New Hampshire,* New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Alaska, Hawaii, Puerto Rico.

November 11, Veterans Day (formerly Armistice Day): All states (except Virginia), D. C., Alaska, Hawaii, Puerto Rico.

November (4th Thursday), Thanksgiving Day: All states, D. C., Alaska, Hawaii, Puerto Rico.

December 25, Christmas: All states, D. C., Alaska, Hawaii, Puerto Rico.

Other Holidays

January 6, Three Kings' Day: Puerto Rico.

January 8, Battle of New Orleans: Louisiana.

January 11, De Hostos' Birthday: Puerto Rico.

January 19, Robert E. Lee's Birthday: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia (Lee-Jackson Day).

January 20, Inauguration Day (every 4 yrs.): D. C., Louisiana (Baton Rouge, only).

January 30, F. D. Roosevelt's Birthday: Kentucky.

February or March (1 day before Ash Wednesday), Mardi Gras (Shrove Tuesday): Alabama, Louisiana (in certain parishes and municipalities).

February 14, Statehood Day: Arizona.

March (first Tuesday), Town Meeting Day: Vermont.

March 2, Texas Independence Day.

March 15, Andrew Jackson's Birthday: Tennessee.

March or April (2 days before Easter), Good

Friday: California (12 M.-3 P.M.), Delaware, Florida, Illinois, Indiana, Louisiana, Maryland, Minnesota, New Jersey, North Dakota, Pennsylvania, Tennessee, Hawaii, Puerto Rico.

March or April (1 day after Easter), Easter Monday: North Carolina.

March 22, Emancipation Day: Puerto Rico.

March 25, Maryland Day.

March 26, Kuhio Day: Hawaii.

March 30, Seward's Day: Alaska.

April (date set by governor) Arbor Day: Utah.

April 12, Halifax Resolutions Anniversary: North Carolina.

April 13, Thomas Jefferson's Birthday: Alabama, Oklahoma.

April 16, De Diego's Birthday: Puerto Rico.

April 19, Patriots' Day: Maine, Massachusetts.

April 21, San Jacinto Day: Texas.

April 22, Arbor Day: Nebraska.

April 22, Oklahoma Day.

April 26, Confederate Memorial Day: Alabama, Florida, Georgia, Mississippi.

April (4th Monday), Fast Day: New Hampshire.

May (1st Friday), Arbor Day: North Dakota.

May 4, Rhode Island Independence Day.

May (2nd Sunday), Mother's Day: Arizona, Oklahoma.

May 10, Confederate Memorial Day: North Carolina, South Carolina.

May 20, Mecklenburg Independence Day: North Carolina.

June 3, Jefferson Davis' Birthday: Alabama, Florida, Georgia, Kentucky (Confederate Memorial Day), Louisiana, Mississippi, South Carolina, Tennessee (Confederate Decoration Day), Texas.

June 11, Kamehameha Day: Hawaii.

June 14, Flag Day: Pennsylvania.

June 20, West Virginia Day.

July 13, Nathan Bedford Forrest's Birthday: Tennessee.

July 17, Muñoz Rivera's Birthday: Puerto Rico.

July 24, Pioneer Day: Utah.

July 25, Constitution Day: Puerto Rico.

July 27, Barbosa's Birthday: Puerto Rico.

August 1, Colorado Day.

August 14, World War II Memorial: Arkansas, Rhode Island.

August 16, Bennington Battle Day: Vermont.

August 30, Huey P. Long Day: Louisiana.

September (1st Saturday after full moon), Indian Day: Oklahoma.

September 9, Admission Day: California.

September 12, Defenders' Day: Maryland.

September 16, Cherokee Strip Day: Oklahoma.

October 10, Oklahoma Historical Day.

October 18, Alaska Day.

October 31, Admission Day: Nevada.

November 1, All Saints' Day: Louisiana.

November 4, Will Rogers Day: Oklahoma.

November 19, Discovery Day: Puerto Rico.

December 26, Day after Christmas: South Carolina.

* State elections only.

AWARDS



NOBEL PRIZES

The Nobel prizes are awarded under the will of Alfred Bernhard Nobel, Swedish chemist and engineer, who died in 1896. The interest of the fund is divided annually among the persons who have made the most outstanding contributions in the field of physics, chemistry, and physiology or medicine, who have produced the most distinguished literary work of an idealist tendency, and who have contributed most toward world peace.

The prizes for physics and chemistry are awarded by the Swedish Academy of Science in Stockholm, the one for physiology or medicine by the Caroline Medical Institute in Stockholm, that for literature by the academy in Stockholm, and that for peace by a committee of five elected by the Norwegian Storting. The distribution of prizes was begun on December 10, 1901, the anniversary of Nobel's death. The amount of each prize varies with the income from the fund and since 1936 has stood at approximately £8,000.

No Nobel prizes were awarded for 1940, 1941 and 1942; prizes for Literature and Peace were not awarded for 1943.

Year	Literature	Peace
1901	René F. A. Sully Prudhomme (France)	Henri Dunant (Switzerland) and Frederick Passy (France)
1902	Theodor Mommsen (Germany)	Elie Ducommun and Albert Gobat (Switzerland)
1903	Björnstjerne Björnson (Norway)	Sir William R. Cremer (England)
1904	Frédéric Mistral (France) and José Echegaray (Spain)	Institut de Droit International (Belgium)
1905	Henryk Sienkiewicz (Poland)	Bertha von Suttner (Austria)
1906	Giosuè Carducci (Italy)	Theodore Roosevelt (U. S.)
1907	Rudyard Kipling (England)	Ernesto T. Moneta (Italy) and Louis Renault (France)
1908	Rudolf Eucken (Germany)	Klas P. Arnoldson (Sweden) and Frederik Bajer (Denmark)
1909	Selma Lagerlöf (Sweden)	Auguste M. F. Beernaert (Belgium) and Baron Paul H. B. d'Estournelles de Constant de Rebecque (France)
1910	Paul von Heyse (Germany)	Bureau International Permanent de la Paix (Switzerland)
1911	Maurice Maeterlinck (Belgium)	Tobias M. C. Asser (Holland) and Alfred H. Fried (Austria)
1912	Gerhart Hauptmann (Germany)	Elhu Root (U. S.)
1913	Rabindranath Tagore (India)	Henri La Fontaine (Belgium)
1915	Romain Rolland (France)	No award
1916	Verner von Heidenstam (Sweden)	No award
1917	Karl Gjellerup (Denmark) and Henrik Pontoppidan (Denmark)	International Red Cross
1919	Carl Spitteler (Switzerland)	Woodrow Wilson (U. S.)
1920	Knut Hamsun (Norway)	Léon Bourgeois (France)
1921	Anatole France (France)	Karl H. Branting (Sweden) and Christian L. Lange (Norway)
1922	Jacinto Benavente (Spain)	Fridtjof Nansen (Norway)
1923	William B. Yeats (Ireland)	No award
1924	Wladyslaw Reymont (Poland)	No award
1925	George Bernard Shaw (England)	Sir Austen Chamberlain (England) and Charles G. Dawes (U. S.)
1926	Grazia Deledda (Italy)	Aristide Briand (France) and Gustav Stresemann (Germany)
1927	Henri Bergson (France)	Ferdinand Buisson (France) and Ludwig Quidde (Germany)
1928	Sigrid Undset (Norway)	No award
1929	Thomas Mann (Germany)	Frank B. Kellogg (U. S.)
1930	Sinclair Lewis (U. S.)	Lars O. J. Söderblom (Sweden)
1931	Erik A. Karlfeldt (Sweden)	Jane Addams (U. S.) and Nicholas M. Butler (U. S.)
1932	John Galsworthy (England)	No award
1933	Ivan G. Bunin (Russia)	Sir Norman Angell (England)
1934	Luigi Pirandello (Italy)	Arthur Henderson (England)
1935	No award	Karl von Ossietzky (Germany)
1936	Eugene O'Neill (U. S.)	Carlos de S. Lamas (Argentina)
1937	Roger Martin du Gard (France)	Lord Cecil of Chelwood (England)
1938	Pearl S. Buck (U. S.)	Office International Nansen pour les Réfugiés (Switzerland)
1939	Frans Eemil Sillanpää (Finland)	No award
1944	Johannes V. Jensen (Denmark)	International Red Cross
1945	Gabriela Mistral (Chile)	Cordell Hull (U. S.)

Year	Literature	Peace
1946	Hermann Hesse (Switzerland)	Emily G. Balch and John R. Mott (U. S.)
1947	André Gide (France)	Am. Friends Service Com. (U. S.), Brit. Soc. of Friends' Service Council (Eng.)
1948	Thomas Stearns Eliot (England)	No award
1949	William Faulkner (U. S.)	Lord John Boyd Orr (Scotland)
1950	Bertrand Russell (England)	Ralph J. Bunche (U. S.)
1951	Pär Lagerkvist (Sweden)	Léon Jouhaux (France)
1952	François Mauriac (France)	Albert Schweitzer (Fr. Eq. Af.)
1953	Sir Winston Churchill (England)	George C. Marshall (U. S.)
1954	Ernest Hemingway (U. S.)	Office of U.N. High Commissioner for Refugees
1955	Halldór Kiljan Laxness (Iceland)	No award
1956	Juan Ramón Jiménez (Spain)	No award

Year	Physics	Chemistry	Medicine
1901	Wilhelm K. Roentgen, for discovery of Roentgen rays.	Jacobus H. van't Hoff, for laws of chemical dynamics and osmotic pressure in solutions.	Emil A. von Behring, for work on serum therapy against diphtheria.
1902	Hendrik A. Lorentz and Pieter Zeeman, for work on influence of magnetism upon radiation.	Emil Fischer, for experiments in sugar and purin groups of substances.	Sir Ronald Ross, for work on malaria.
1903	A. Henri Becquerel, work on discovery of spontaneous radioactivity. Pierre and Marie Curie; study of radiation.	Svante A. Arrhenius, for his electrolytic theory of dissociation.	Niels R. Finsen, for his treatment of lupus vulgaris, with concentrated light rays.
1904	John Strutt (Lord Rayleigh) for discovery of argon in investigating gas density.	Sir William Ramsay; discovery and determination of place of inert gaseous elements in air.	Ivan P. Pavlov, for work on the physiology of digestion.
1905	Philipp Lenard, for work with cathode rays.	Adolf von Baeyer, for work on organic dyes and hydroaromatic combinations.	Robert Koch, for work on tuberculosis.
1906	Joseph J. Thomson, for investigations on passage of electricity through gases.	Henri Moissan, for isolation of fluorine, and introduction of electric furnace.	Camillo Golgi and Santiago Ramón y Cajal, for work on structure of the nervous system.
1907	Albert A. Michelson, for spectroscopic and meteorologic investigations.	Eduard Buchner; discovery of cell-less fermentation and investigations in biological chemistry.	Charles L. A. Laveran, for work with protozoa in the generation of disease.
1908	Gabriel Lippmann, for method of reproducing colors by photography.	Ernest Rutherford, for investigations into disintegration of elements and chemistry of radioactive substances.	Paul Ehrlich and Élie Metchnikoff, for work on immunity.
1909	Guglielmo Marconi and Ferdinand Braun, for development of wireless.	Wilhelm Ostwald, for work on catalysis and investigations into chemical equilibrium and reaction rates.	Theodor Kocher, for work on the thyroid gland.
1910	Johannes D. van der Waals, for work with the equation of state for gases and liquids.	Otto Wallach, for work in the field of alicyclic compounds.	Albrecht Kossel, for achievements in the chemistry of the cell.
1911	Wilhelm Wien, for his laws governing the radiation of heat.	Marie Curie, for discovery of elements radium and polonium.	Allvar Gullstrand, for work on the dioptrics of the eye.
1912	Gustaf Dalén, for discovery of automatic regulators used in lighting lighthouses and light buoys.	Victor Grignard, for reagent discovered by and named after him. Paul Sabatier, for the methods of hydrogenating organic compounds.	Alexis Carrel, for work on vascular ligature and grafting of blood vessels and organs.

Year	Physics	Chemistry	Medicine
1913	H. Kamerlingh-Onnes, for work leading to production of liquid helium.	Alfred Werner, for linking up atoms within the molecule.	Charles Richet, for work on anaphylaxis.
1914	Max von Laue, for discovery of diffraction of Roentgen rays passing through crystals.	Theodore W. Richards, for determining atomic weight of many chemical elements.	Robert Bárány, for work on physiology and pathology of the vestibular system.
1915	W. H. Bragg and W. L. Bragg, for analysis of crystal structure by means of X rays.	Richard Willstätter, for research into coloring matter of plants, especially chlorophyll.	No award.
1917	Charles G. Barkla, discovery of Roentgen radiation of the elements.	No award.	No award.
1918	Max Planck, for discoveries in connection with quantum theory.	Fritz Haber, for synthetic production of ammonia.	No award.
1919	Johannes Stark, discovery of Doppler effect in Canal rays and decomposition of spectrum lines by electric fields.	No award.	Jules Bordet, for discoveries in connection with immunity.
1920	Charles E. Guillaume, for discoveries of anomalies in nickel steel alloys.	Walther Nernst, for work in thermochemistry.	August Krogh, discovery of regulation of capillaries' motor mechanism.
1921	Albert Einstein, for discovery of the law of the photoelectric effect.	Frederick Soddy, for investigations into origin and nature of isotopes.	No award.
1922	Niels Bohr, for investigations of structure of atoms and radiations emanating from them.	Francis W. Aston, for discovery of isotopes in nonradioactive elements and for discovery of the whole number rule.	In 1923 the 1922 prize was divided between Archibald V. Hill for discovery relating to heat-production in muscles; and Otto Meyerhof, for correlation between consumption of oxygen and production of lactic acid in muscles.
1923	Robert A. Millikan, work on elementary charge of electricity and photoelectric phenomena.	Fritz Pregl, for method of microanalysis of organic substances discovered by him.	Frederick G. Banting and John J. R. Macleod, for discovery of insulin.
1924	Karl M. G. Siegbahn, for investigations in X-ray spectroscopy.	No award.	Willem Einthoven, for discovering the mechanism of the electrocardiogram.
1925	James Franck and Gustav Hertz, for discovery of laws governing impact of electrons upon atoms.	In 1926 the 1925 prize was awarded to Richard Zsigmondy, for work on the heterogeneous nature of colloid solutions.	No award.
1926	Jean B. Perrin, for works on discontinuous structure of matter and discovery of the equilibrium of sedimentation.	Theodor Svedberg, for work on disperse systems.	Johannes Fibiger, for discovery of the Spiroptera carcinoma.
1927	Arthur H. Compton, discovery of Compton phenomenon; and Charles T. R. Wilson, for method of perceiving paths taken by electrically charged particles.	In 1928 the 1927 prize was awarded to Heinrich Wieland, for investigations of bile acids and kindred substances.	Julius Wagner-Jauregg, for use of malaria inoculation in treatment of dementia paralytica.

Year	Physics	Chemistry	Medicine
1928	In 1929 the 1928 prize was awarded to Owen W. Richardson, for work on the phenomenon of thermionics and discovery of the Richardson Law.	Adolf Windaus, for investigations on constitution of the sterols and their connection with vitamins.	Charles Nicolle, for work on typhus exanthematicus.
1929	Prince Louis Victor de Broglie, for discovery of the wave character of electrons.	Arthur Harden and Hans K. A. S. von Euler-Chelpin, for research of fermentation of sugars.	Christiaan Eijkman, for discovery of the antineuritic vitamins; and Sir Frederick G. Hopkins, for discovery of growth-promoting vitamins.
1930	Sir Chandrasekhara V. Raman, for work on diffusion of light and discovery of the Raman effect.	Hans Fischer, for work on coloring matter of blood and leaves and for his synthesis of hemin.	Karl Landsteiner, for discovery of human blood groups.
1931	No award.	Karl Bosch and Friedrich Bergius, for invention and development of chemical high-pressure methods.	Otto H. Warburg, for discovery of the character and mode of action of the respiratory ferment.
1932	In 1933 the prize for 1932 was awarded to Werner Heisenberg, for creation of the quantum mechanics.	Irving Langmuir, for work in realm of surface chemistry.	Sir Charles S. Sherrington and Edgar D. Adrian, for discoveries of the function of the neuron.
1933	Erwin Schrödinger and Paul A. M. Dirac, for discovery of new fertile forms of the atomic theory.	No award.	Thomas H. Morgan, for discoveries on hereditary function of the chromosomes.
1934	No award.	Harold C. Urey, for discovery of heavy hydrogen.	George H. Whipple, George R. Minot, and William P. Murphy, for discovery of liver therapy against anemias.
1935	James Chadwick, for discovery of the neutron.	Frédéric and Irène Joliot-Curie, for synthesis of new radioactive elements.	Hans Spemann, for discovery of the organizer-effect in embryonic development.
1936	Victor F. Hess, for discovery of cosmic radiation; and Carl D. Anderson, for discovery of the positron.	Peter J. W. Debye, for investigations on dipole moments and diffraction of X rays and electrons in gases.	Sir Henry H. Dale and Otto Loewi, for discoveries on chemical transmission of nerve impulses.
1937	Clinton J. Davisson and George P. Thomson, for discovery of diffraction of electrons by crystals.	Walter N. Haworth, for research on carbohydrates and vitamin C; and Paul Karrer, for work on carotenoids, flavins and vitamins A and B.	Albert Szent-Györgyi von Nagrapolt, for discoveries on biological combustion.
1938	Enrico Fermi, for identification of new radioactivity elements and discovery of nuclear reactions effected by slow neutrons.	Richard Kuhn, for carotinoid study and vitamin research (declined the prize).	Cornelle Heymans, for importance of sinus and aorta mechanisms in the regulation of respiration.
1939	Ernest Orlando Lawrence, for the development of the cyclotron.	Adolf Friedrich Johann Butenandt, for work on sexual hormones (declined the prize); and Leopold Ružička, work with polymethylenes.	Gerhard Domagk, antibacterial effect of prontosil.

Year	Physics	Chemistry	Medicine
1943	Otto Stern, for detection of magnetic momentum of protons.	George Hevesy De Heves, for work on use of isotopes as indicators.	Henrik Dam, Edward A. Doisy for the analysis of Vitamin K.
1944	Isidor Isaac Rabi, for work on magnetic movements of atomic particles.	Otto Hahn, for work on atomic fission.	Joseph Erlanger and Herbert Spencer Gasser, for work on functions of the nerve threads.
1945	Wolfgang Pauli, for work on atomic fissions.	Artturi Ilmari Virtanen, for research in the field of conservation of fodder.	Sir Alexander Fleming, Ernst Boris Chain, and Sir Howard Florey, for discovery of penicillin.
1946	Percy Williams Bridgman, studies and inventions in high-pressure physics.	James B. Sumner, crystallizing of enzymes. John H. Northrop and Wendell M. Stanley, preparing enzymes and virus proteins in pure form.	Herman J. Muller, hereditary effects of X ray on genes.
1947	Sir Edward Appleton, for discovery of layer which reflects radio short waves in the ionosphere.	Sir Robert Robinson, for research in plant substances.	Carl F. and Gerty T. Cori, for work on animal starch metabolism; Bernardo A. Houssay, for study of pituitary.
1948	Patrick M. S. Blackett, for improvement on Wilson chamber, discoveries in cosmic radiation.	Arne Tiselius, for biochemical discoveries and isolation of mouse paralysis virus.	Paul Mueller, for discovery of insect-killing properties of DDT.
1949	Hideki Yukawa, for mathematical prediction, 14 years ago, of the meson.	William Francis Glauque, for research in thermodynamics, especially effects of low temperature.	Walter Rudolf Hess, for research on brain control of body; and Antonio Caetano de Abreu Freire Egas Moniz, for development of brain operation.
1950	Cecil Frank Powell, for method of photographic study of atom nucleus, and for discoveries about mesons.	Otto Diels and Kurt Alder for discovery of diene synthesis enabling scientists to study structure of organic matter.	Philip S. Hench, Edward C. Kendall, and Tadeus Reichstein, for discoveries about hormones of adrenal cortex.
1951	Sir John Douglas Cockcroft and Ernest T. S. Walton, for work in 1932 on transmutation of atomic nuclei.	Glenn T. Seaborg and Edwin M. McMillan, for discovery of plutonium.	Max Theller, for development of anti-yellow fever vaccine.
1952	Edward Mills Purcell and Felix Bloch, for work in measurement of magnetic fields in atomic nuclei.	Archer John Porter Martin and Richard Laurence Millington Synge, for development of partition chromatography.	Selman A. Waksman, for co-discovery of streptomycin.
1953	Fritz Zernike, for development of "phase contrast" microscope.	Hermann Staudinger, for research in giant molecules.	Fritz A. Lipmann and Hans Adolph Krebs, for studies of living cells.
1954	Max Born, for work in quantum mechanics; and Walther Bothe, for work in cosmic radiation.	Linus Pauling, for study of forces holding together protein and other molecules.	John F. Enders, Thomas H. Weller and Frederick C. Robbins, for work with cultivation of polio virus.
1955	Polykarp Kusch and Willis E. Lamb, for work in atomic measurement.	Vincent du Vigneaud, for work on pituitary hormones.	Hugo Theorell, for work on oxidation enzymes.
1956	William Shockley, Walter H. Brattain and John Bardeen for developing electronic transistor.	Cyril Hinshelwood and Nikolai N. Semenov for parallel research on chemical reaction kinetics.	Dickinson W. Richards, Jr., André F. Cournand and Werner Forssmann for new techniques in heart disease.

(For 1957 Nobel prize winners, see Nobel prizes in index.)

Pulitzer Prize Awards

Source: Columbia University, New York. (For years not listed, no award was made.)

Pulitzer Prizes in Journalism

Meritorious Public Service	
1918 <i>New York Times</i>	1923 WILLIAM ALLEN WHITE (<i>Emporia [Kans.] Gazette</i>)
1919 <i>Milwaukee Journal</i>	1924 <i>Boston Herald</i> ; Special prize: FRANK I. COBB (<i>New York World</i>)
1921 <i>Boston Post</i>	1925 <i>Charleston (S. C.) News and Courier</i>
1922 <i>New York World</i>	1926 <i>New York Times</i> (Edward M. Kingsbury)
1923 <i>Memphis Commercial Appeal</i>	1927 <i>Boston Herald</i> (F. Lauriston Bullard)
1924 <i>New York World</i>	1928 GROVER CLEVELAND HALL (<i>Montgomery [Ala.] Advertiser</i>)
1926 <i>Columbus (Ga.) Enquirer Sun</i>	1929 LOUIS ISAAC JAFFE (<i>Norfolk Virginian-Pilot</i>)
1927 <i>Canton (Ohio) Daily News</i>	1931 CHARLES S. RYCKMAN (<i>Fremont [Nebr.] Tribune</i>)
1928 <i>Indianapolis Times</i>	1933 <i>Kansas City (Mo.) Star</i>
1929 <i>New York Evening World</i>	1934 E. P. CHASE (<i>Atlantic [Iowa] News Telegraph</i>)
1931 <i>Atlanta Constitution</i>	1936 FELIX MORLEY (<i>Washington [D.C.] Post</i>); GEORGE B. PARKER (<i>Scripps-Howard Newspapers</i>)
1932 <i>Indianapolis News</i>	1937 JOHN W. OWENS (<i>Baltimore Sun</i>)
1933 <i>New York World-Telegram</i>	1938 W. W. WAYMACK (<i>Des Moines Register & Tribune</i>)
1934 <i>Medford (Oreg.) Mail Tribune</i>	1939 RONALD G. CALLVERT (<i>Portland Oregonian</i>)
1935 <i>Sacramento Bee</i>	1940 BART HOWARD (<i>St. Louis Post-Dispatch</i>)
1936 <i>Cedar Rapids (Iowa) Gazette</i>	1941 REUBEN MAURY (<i>New York Daily News</i>)
1937 <i>St. Louis Post-Dispatch</i>	1942 GEOFFREY PARSONS (<i>New York Herald Tribune</i>)
1938 <i>Bismarck (N. Dak.) Tribune</i> ; Special Bronze Plaque: <i>Edmonton (Alberta) Journal</i>	1943 FORREST W. SEYMOUR (<i>Des Moines Register & Tribune</i>)
1939 <i>Miami Daily News</i>	1944 <i>Kansas City (Mo.) Star</i> (Henry J. Haskell)
1940 <i>Waterbury (Conn.) Republican & American</i>	1945 GEORGE W. POTTER (<i>Providence [R. I.] Journal-Bulletin</i>)
1941 <i>St. Louis Post-Dispatch</i>	1946 HODDING CARTER (<i>[Greenville, Miss.] Delta Democrat-Times</i>)
1942 <i>Los Angeles Times</i>	1947 WILLIAM H. GRIMES (<i>Wall Street Journal</i>)
1943 <i>Omaha World-Herald</i>	1948 VIRGINIUS DABNEY (<i>Richmond Times-Dispatch</i>)
1944 <i>New York Times</i>	1949 JOHN H. CRIDER (<i>Boston Herald</i>) HERBERT ELLISTON (<i>Washington Post</i>)
1945 <i>Detroit Free Press</i>	1950 CARL M. SAUNDERS (<i>Jackson [Mich.] Citizen Patriot</i>)
1946 <i>Scranton (Pa.) Times</i>	1951 WILLIAM H. FITZPATRICK (<i>New Orleans States</i>)
1947 <i>Baltimore Sun</i>	
1948 <i>St. Louis Post-Dispatch</i>	
1949 (<i>Lincoln</i>) <i>Nebraska State Journal</i>	
1950 <i>Chicago Daily News</i> ; <i>St. Louis Post-Dispatch</i>	
1951 <i>Miami Herald</i> ; <i>Brooklyn Eagle</i>	
1952 <i>St. Louis Post-Dispatch</i>	
1953 <i>Whiteville (N. C.) News Reporter</i> ; <i>Tabor City (N. C.) Tribune</i>	
1954 (<i>Garden City, L. I.</i>) <i>Newsday</i>	
1955 <i>Columbus (Ga.) Ledger & Sunday Ledger-Enquirer</i>	
1956 <i>Watsonville (Calif.) Register-Pajaronian</i>	
1957 <i>Chicago Daily News</i>	
Editorial	
1917 <i>New York Tribune</i>	
1918 <i>Louisville Courier-Journal</i>	
1920 HARVEY E. NEWBRANCH (<i>Omaha Evening World-Herald</i>)	
1922 FRANK M. O'BRIEN (<i>New York Herald</i>)	
1922 LOUIS LACOSS (<i>St. Louis Globe-Democrat</i>)	
1953 VERMONT C. ROYSTER (<i>Wall Street Journal</i>)	
1954 DONALD M. MURRY (<i>Boston Herald</i>)	
1955 ROYCE HOWES (<i>Detroit Free Press</i>)	
1956 LAUREN K. SOTH (<i>Des Moines Register & Tribune</i>)	
1957 BUFORD BOONE (<i>Tuscaloosa [Ala.] News</i>)	
Correspondence	
1929 PAUL SCOTT MOWRER (<i>Chicago Daily News</i>)	
1930 LELAND STOWE (<i>New York Herald Tribune</i>)	
1931 H. E. KNICKERBOCKER (<i>Philadelphia Public Ledger and New York Evening Post</i>)	
1932 WALTER DURANTY (<i>New York Times</i>); CHARLES G. ROSS (<i>St. Louis Post-Dispatch</i>)	
1933 EDGAR ANSEL MOWRER (<i>Chicago Daily News</i>)	
1934 FREDERICK T. BIRCHALL (<i>New York Times</i>)	
1935 ARTHUR KROCK (<i>New York Times</i>)	
1936 WILFRED C. BARBER (<i>Chicago Tribune</i>)	
1937 ANNE O'HARE MCCORMICK (<i>New York Times</i>)	
1938 ARTHUR KROCK (<i>New York Times</i>)	
1939 LOUIS P. LOCHNER (<i>Associated Press</i>)	
1940 OTTO D. TOLTSCHUS (<i>New York Times</i>)	
1941 Group award*	
1942 CARLOS P. ROMULO (<i>Philippines Herald</i>)	
1943 HANSON W. BALDWIN (<i>New York Times</i>)	
1944 ERNIE PYLE (<i>Scripps-Howard Newspaper Alliance</i>)	
1945 HAROLD V. (Hal) BOYLE (<i>Associated Press</i>)	
1946 ARNALDO CORTESI (<i>New York Times</i>)	
1947 BROOKS ATKINSON (<i>New York Times</i>)	
1948 Discontinued	
Cartoon	
1922 ROLLIN KIRBY (<i>New York World</i>)	
1924 JAY NORWOOD DARLING (<i>New York Tribune</i>)	
1925 ROLLIN KIRBY (<i>New York World</i>)	

*For the public services and the individual achievements of American news reporters in the war zones.

- 1926 D. R. FITZPATRICK (*St. Louis Post-Dispatch*)
- 1927 NELSON HARDING (*Brooklyn Eagle*)
- 1928 NELSON HARDING (*Brooklyn Eagle*)
- 1929 ROLLIN KIRBY (*New York World*)
- 1930 CHARLES R. MACAULEY (*Brooklyn Eagle*)
- 1931 EDMUND DUFFY (*Baltimore Sun*)
- 1932 JOHN T. MCCUTCHEON (*Chicago Tribune*)
- 1933 HAROLD MORTON TALBURT (*Washington Daily News*)
- 1934 EDMUND DUFFY (*Baltimore Sun*)
- 1935 ROSS A. LEWIS (*Milwaukee Journal*)
- 1937 CLARENCE DANIEL BATCHELOR (*New York Daily News*)
- 1938 VAUGHN SHOEMAKER (*Chicago Daily News*)
- 1939 CHARLES G. WERNER (*Daily Oklahoman* [Oklahoma City])
- 1940 EDMUND DUFFY (*Baltimore Sun*)
- 1941 JACOB BURCK (*Chicago Times*)
- 1942 HERBERT L. BLOCK (NEA Service)
- 1943 JAY NORWOOD DARLING (*New York Herald Tribune*)
- 1944 CLIFFORD K. BERRYMAN (*Washington* [D. C.] *Evening Star*)
- 1945 BILL MAULDIN (United Features Syndicate)
- 1946 BRUCE ALEXANDER RUSSELL (*Los Angeles Times*)
- 1947 VAUGHN SHOEMAKER (*Chicago Daily News*)
- 1948 RUBE GOLDBERG (*New York Sun*)
- 1949 LUTE PEASE (*Newark Evening News*)
- 1950 JAMES T. BERRYMAN (*Washington* [D. C.] *Evening Star*)
- 1951 REG (REGINALD W.) MANNING (*Arizona Republic* [Phoenix])
- 1952 FRED L. PACKER (*New York Mirror*)
- 1953 EDWARD D. KUEKES (*Cleveland Plain Dealer*)
- 1954 HERBERT L. BLOCK (*Washington* [D. C.] *Post*)
- 1955 DANIEL R. FITZPATRICK (*St. Louis Post-Dispatch*)
- 1956 ROBERT YORK (*Louisville Times*)
- 1957 TOM LITTLE (*Nashville Tennessean*)
- News Photography**
- 1942 MILTON BROOKS (*Detroit News*)
- 1943 FRANK NOEL (Associated Press)
- 1944 FRANK FILAN (Associated Press) EARLE L. BUNKER (*Omaha World-Herald*)
- 1945 JOE ROSENTHAL (Associated Press)
- 1947 ARNOLD HARDY
- 1948 FRANK CUSHING (*Boston Traveler*)
- 1949 NAT FEIN (*New York Herald Tribune*)
- 1950 BILL CROUCH (*Oakland Tribune*)
- 1951 MAX DESFOR (Associated Press)
- 1952 JOHN ROBINSON & DON ULTANG (*Des Moines Register & Tribune*)
- 1953 WILLIAM M. GALLAGHER (*Flint* [Mich.] *Journal*)
- 1954 MRS. WALTER M. SCHAU
- 1955 JOHN L. GAUNT, JR. (*Los Angeles Times*)
- 1956 *New York Daily News*
- 1957 HARRY A. TRASK (*Boston Traveler*)
- American Newspaper Alliance, Inc.)**
- 1944 DANIEL DE LUCE (Associated Press)
- 1945 MARK S. WATSON (*Baltimore Sun*)
- 1946 HOMER W. BIGART (*New York Herald Tribune*)
- 1947 EDDY GILMORE (Associated Press)
- International Reporting**
- 1948 PAUL W. WARD (*Baltimore Sun*)
- 1949 PRICE DAY (*Baltimore Sun*)
- 1950 EDMUND STEVENS (*Christian Science Monitor*)
- 1951 KEYES BEECH & FRED SPARKS (*Chicago Daily News*); HOMER BIGART & MARGUERITE HIGGINS (*New York Herald Tribune*); RELMAN MORIN & DON WHITEHEAD (Associated Press)
- 1952 JOHN M. HIGHTOWER (Associated Press)
- 1953 AUSTIN C. WEHRWEIN (*Milwaukee Journal*)
- 1954 JIM G. LUCAS (Scripps-Howard Newspapers)
- 1955 HARRISON E. SALISBURY (*New York Times*)
- 1956 WILLIAM RANDOLPH HEARST, JR., & FRANK CONNIFF (Hearst newspapers) & KINGSLEY SMITH (INS)
- 1957 RUSSELL JONES (United Press)
- National Telegraphic Reporting**
- 1942 LOUIS STARK (*New York Times*)
- 1944 DEWEY L. FLEMING (*Baltimore Sun*)
- 1945 JAMES B. RESTON (*New York Times*)
- 1946 EDWARD A. HARRIS (*St. Louis Post-Dispatch*)
- 1947 EDWARD T. FOLLARD (*Washington* [D. C.] *Post*)
- National Reporting**
- 1948 BERT ANDREWS (*New York Herald Tribune*); NAT S. FINNY (*Minneapolis Tribune*)
- 1949 C. P. TRUSSELL (*New York Times*)
- 1950 EDWIN O. GUTHMAN (*Seattle Times*)
- 1952 ANTHONY LEVIERO (*New York Times*)
- 1953 DON WHITEHEAD (Associated Press)
- 1954 RICHARD L. WILSON (Cowles Newspapers)
- 1955 ANTHONY LEWIS (*Washington Daily News*)
- 1956 CHARLES L. BARTLETT (*Chattanooga Times*)
- 1957 JAMES RESTON (*New York Times*)
- International Telegraphic Reporting**
- 1942 LAURENCE EDMUND ALLEN (Associated Press)
- 1943 IRA WOLFERT (North
- Reporting**
- 1917 HERBERT B. SWOPE (*New York World*)
- 1918 HAROLD A. LITLEDALE (*New York Evening Post*)
- 1920 JOHN J. LEARY, JR. (*New York World*)
- 1921 LOUIS SEIBOLD (*New York World*)
- 1922 KIRKE L. SIMPSON (Associated Press)
- 1923 ALVA JOHNSTON (*New York Times*)
- 1924 MAGNER WHITE (*San Diego Sun*)
- 1925 JAMES W. MULROY & ALVIN H. GOLDSTEIN (*Chicago Daily News*)
- 1926 WILLIAM BURKE MILLER (*Louisville Courier-Journal*)
- 1927 JOHN T. ROGERS (*St. Louis Post-Dispatch*)
- 1929 PAUL Y. ANDERSON (*St. Louis Post-Dispatch*)
- 1930 RUSSELL D. OWEN (*New York Times*); Special award: W. O. DAPPING (*Auburn* [N. Y.] *Citizen*)

- 1931 A. B. MACDONALD (*Kansas City [Mo.] Star*)
 1932 W. C. RICHARDS, D. D. MARTIN, J. S. POOLER, F. D. WEBB, J. N. W. SLOAN (all of *Detroit Free Press*)
 1933 FRANCIS A. JAMIESON (Associated Press)
 1934 ROYCE BRIER (*San Francisco Chronicle*)
 1935 WILLIAM H. TAYLOR (*New York Herald Tribune*)
 1936 LAUREN D. LYMAN (*New York Times*)
 1937 JOHN J. O'NEILL (*New York Herald Tribune*), WILLIAM LEONARD LAURENCE (*New York Times*), HOWARD W. BLAKESLEE (Associated Press), GOBIND BEHARILAL (Universal Service), DAVID DIETZ (Scripps-Howard Newspapers)
 1938 RAYMOND SPRIGLE (*Pittsburgh Post-Gazette*)
 1939 THOMAS L. STOKES (*New York World-Telegram*)
 1940 S. BURTON HEATH (*New York World-Telegram*)
 1941 WESTBROOK PEGLER (*New York World-Telegram*)
 1942 STANTON DELAPLANE (*San Francisco Chronicle*)
 1943 GEORGE WELLER (*Chicago Daily News*)
 1944 PAUL SCHOENSTEIN & associates (*New York Journal-American*)
 1945 JACK S. McDOWELL (*San Francisco Call-Bulletin*)
 1946 WILLIAM LEONARD LAURENCE (*New York Times*)
 1947 FREDERICK WOLTMAN (*New York World-Telegram*)

Novel

- 1918 *His Family*. By ERNEST POOLE
 1919 *The Magnificent Ambersons*. By BOOTH TARKINGTON
 1921 *The Age of Innocence*. By EDITH WHARTON
 1922 *Alice Adams*. By BOOTH TARKINGTON
 1923 *One of Ours*. By WILLA CATHER
 1924 *The Able McLaughlins*. By MARGARET WILSON
 1925 *So Big*. By EDNA FERBER
 1926 *Arrowsmith*. By SINCLAIR LEWIS
 1927 *Early Autumn*. By LOUIS BROMFIELD

Local Reporting

- 1948 GEORGE E. GOODWIN (*Atlanta Journal*)
 1949 MALCOLM JOHNSON (*New York Sun*)
 1950 MEYER BERGER (*New York Times*)
 1951 EDWARD S. MONTGOMERY (*San Francisco Examiner*)
 1952 GEORGE DE CARVALHO (*San Francisco Chronicle*)
 1953 Reporting and photographic staffs (*Providence Journal & Evening Bulletin*); EDWARD J. MOWERY (*New York World-Telegram & Sun*)
 1954 Vicksburg (Miss.) *Sunday Post-Herald*; ALVIN SCOTT MCCOY (*Kansas City [Mo.] Star*)
 1955 MRS. CARO BROWN (*Alice [Tex.] Daily Echo*); ROLAND KENNETH TOWERY (*Cuero [Tex.] Record*)
 1956 LEE HILLS (*Detroit Free Press*); ARTHUR DALEY (*New York Times*)
 1957 Staff of *Salt Lake Tribune*; WALLACE TURNER and WILLIAM LAMBERT (*Portland Oregonian*)

Special Citation

- 1941 *New York Times* for the public educational value of its foreign news report.
 1944 BYRON PRICE, Director of the Office of Censorship, for the creation and administration of the newspaper and radio codes.
 1945 MRS. WILLIAM ALLEN WHITE, for her husband's interest and services during the past

seven years as a member of the Advisory Board of the Graduate School of Journalism, Columbia University. The cartographers of the American press for their war maps.

- 1947 (Pulitzer centennial year.) Columbia University and the Graduate School of Journalism, for their efforts to maintain and advance the high standards governing the Pulitzer Prize awards. The *St. Louis Post-Dispatch*, for its unswerving adherence to the public and professional ideals of its founder and its leadership in the field of American journalism.
 1948 DR. FRANK D. FACKENTHAL, for his interest and service.
 1951 CYRUS L. SULZBERGER (*New York Times*) for his exclusive interview with Archbishop Stepinac in a Yugoslav prison.
 1952 *Kansas City Star* for coverage of 1951 floods; MAX KASE (*New York Journal-American*) for exposures of bribery in college basketball.
 1953 *New York Times* for its 17-year publication of "News of the Week in Review."

History of Services Rendered Public by American Press in Preceding Year

- 1918 MINNA LEWISON, HENRY B. HOUGH

Pulitzer Prizes in Letters

- 1928 *The Bridge of San Luis Rey*. By THORNTON WILDER
 1929 *Scarlet Sister Mary*. By JULIA PETERKIN
 1930 *Laughing Boy*. By OLIVER LA FARGE
 1931 *Years of Grace*. By MARGARET AYER BARNES
 1932 *The Good Earth*. By PEARL S. BUCK
 1933 *The Store*. By T. S. STRIBLING
 1934 *Lamb in His Bosom*. By CAROLINE MILLER
 1935 *Now in November*. By JOSEPHINE WINSLOW JOHNSON

- 1936 *Honey in the Horn*. By HAROLD L. DAVIS
 1937 *Gone With the Wind*. By MARGARET MITCHELL
 1938 *The Late George Apley*. By JOHN PHILLIPS MARQUAND
 1939 *The Yearling*. By MARJORIE KINNAN RAWLINGS
 1940 *The Grapes of Wrath*. By JOHN STEINBECK
 1942 *In This Our Life*. By ELLEN GLASGOW
 1943 *Dragon's Teeth*. By UPTON SINCLAIR
 1944 *Journey in the Dark*. By MARTIN FLAVIN
 1945 *A Bell for Adano*. By JOHN HERSEY

- 1947 *All the King's Men.* By ROBERT PENN WARREN
- 1948 *Tales of the South Pacific.* By JAMES A. MICHENER
- 1949 *Guard of Honor.* By JAMES GOULD COZZENS
- 1950 *The Way West.* By A. B. GUTHRIE, JR.
- 1951 *The Town.* By CONRAD RICHTER
- 1952 *The Caine Mutiny.* By HERMAN WOUK
- 1953 *The Old Man and the Sea.* By ERNEST HEMINGWAY
- 1955 *A Fable.* By WILLIAM FAULKNER
- 1956 *Andersonville.* By MAC-KINLAY KANTOR
- 1957 No award for fiction. Special citation to KENNETH ROBERTS for his historical novels.
- Drama**
- 1918 *Why Marry?* By JESSE LYNCH WILLIAMS
- 1920 *Beyond the Horizon.* By EUGENE O'NEILL
- 1921 *Miss Lulu Bett.* By ZONA GALE
- 1922 *Anna Christie.* By EUGENE O'NEILL
- 1923 *Icebound.* By OWEN DAVIS
- 1924 *Hell-Bent 'Fer Heaven.* By HATCHER HUGHES
- 1925 *They Knew What They Wanted.* By SIDNEY HOWARD
- 1926 *Craig's Wife.* By GEORGE KELLY
- 1927 *In Abraham's Bosom.* By PAUL GREEN
- 1928 *Strange Interlude.* By EUGENE O'NEILL
- 1929 *Street Scene.* By ELMER L. RICE
- 1930 *The Green Pastures.* By MARC CONNELLY
- 1931 *Alison's House.* By SUSAN GLASPELL
- 1932 *Of Thee I Sing.* By GEORGE S. KAUFMAN, MORRIE RYSKIND & IRA GERSHWIN
- 1933 *Both Your Houses.* By MAXWELL ANDERSON
- 1934 *Men in White.* By SIDNEY KINGSLEY
- 1935 *The Old Maid.* By ZOE AKINS
- 1936 *Idiot's Delight.* By ROBERT E. SHERWOOD
- 1937 *You Can't Take It With You.* By MOSS HART and GEORGE S. KAUFMAN
- 1938 *Our Town.* By THORNTON WILDER
- 1939 *Abe Lincoln in Illinois.* By ROBERT E. SHERWOOD
- 1940 *The Time of Your Life.* By WILLIAM SAROYAN
- 1941 *There Shall Be No Night.* By ROBERT E. SHERWOOD
- 1943 *The Skin of Our Teeth.* By THORNTON WILDER
- 1945 *Harvey.* By MARY CHASE
- 1946 *State of the Union.* By RUSSELL CROUSE and HOWARD LINDSAY
- 1948 *A Streetcar Named Desire.* By TENNESSEE WILLIAMS
- 1949 *Death of a Salesman.* By ARTHUR MILLER
- 1950 *South Pacific.* By RICHARD RODGERS, OSCAR HAMMERSTEIN 2ND, AND JOSHUA LOGAN
- 1952 *The Strike.* By JOSEPH KRAMM
- 1953 *Picnic.* By WILLIAM INGE
- 1954 *The Teahouse of the August Moon.* By JOHN PATRICK
- 1955 *Cat on a Hot Tin Roof.* By TENNESSEE WILLIAMS
- 1956 *The Diary of Anne Frank.* By FRANCES GOODRICH & ALBERT HACKETT
- 1957 *Long Day's Journey Into Night.* By EUGENE O'NEILL
- History**
- 1917 *With Americans of Past and Present Days.* By J. J. JUSSERAND, Ambassador of France to U. S.
- 1918 *A History of the Civil War, 1861-1865.* By JAMES FORD RHODES
- 1920 *The War with Mexico.* By JUSTIN H. SMITH
- 1921 *The Victory at Sea.* By WILLIAM SOWDEN SIMS in collaboration with BURTON J. HENDRICK
- 1922 *The Founding of New England.* By JAMES TRUSLOW ADAMS
- 1923 *The Supreme Court in United States History.* By CHARLES WARREN
- 1924 *The American Revolution—A Constitutional Interpretation.* By CHARLES HOWARD MCILWAIN
- 1925 *A History of the American Frontier.* By FREDERIC L. PAXSON
- 1926 *The History of the United States.* By EDWARD CHANNING
- 1927 *Pinckney's Treaty.* By SAMUEL FLAGG BEMIS
- 1928 *Main Currents in American Thought,* 2 vols. By VERNON LOUIS PARINGTON
- 1929 *The Organization and Administration of the Union Army, 1861-1865.* By FRED ALBERT SHANNON
- 1930 *The War of Independence.* By CLAUDE H. VAN TYNE
- 1931 *The Coming of the War: 1914.* By BERNADOTTE E. SCHMITT
- 1932 *My Experiences in the World War.* By JOHN J. PERSHING
- 1933 *The Significance of Sections in American History.* By FREDERICK J. TURNER
- 1934 *The People's Choice.* By HERBERT AGAR
- 1935 *The Colonial Period of American History.* By CHARLES MCLEAN ANDREWS
- 1936 *The Constitutional History of the U. S.* By ANDREW C. McLAUGHLIN
- 1937 *The Flowering of New England.* By VAN WYCK BROOKS
- 1938 *The Road to Reunion, 1865-1900.* By PAUL HERMAN BUCK
- 1939 *A History of American Magazines.* By FRANK LUTHER MOTT
- 1940 *Abraham Lincoln: The War Years.* By CARL SANDBURG
- 1941 *The Atlantic Migration, 1607-1860.* By MARCUS LEE HANSEN
- 1942 *Reveille in Washington.* By MARGARET LEECH
- 1943 *Paul Revere and the World He Lived In.* By ESTHER FORBES
- 1944 *The Growth of American Thought.* By MERLE CURTI
- 1945 *Unfinished Business.* By STEPHEN BONSAL
- 1946 *The Age of Jackson.* By ARTHUR M. SCHLESINGER, JR.
- 1947 *Scientists Against Time.* By JAMES PHINNEY BAXTER, 3RD
- 1948 *Across the Wide Missouri.* By BERNARD DEVOTO
- 1949 *The Disruption of American Democracy.* By ROY FRANKLIN NICKOLS
- 1950 *Art and Life in America.* By OLIVER W. LARKIN
- 1951 *The Old Northwest, Pioneer Period 1815-1840, Vols. I and II.* By R. CARLYLE BULEY

- 1952 *The Uprooted*. By OSCAR HANDLIN
- 1953 *The Era of Good Feelings*. By GEORGE DAN-GERFIELD
- 1954 *A Stillness at Appomattox*. By BRUCE CATTON
- 1955 *Great River, the Rio Grande in North American History*. By PAUL HORGAN
- 1956 *The Age of Reform*. By RICHARD HOFSTADTER
- 1957 *Russia Leaves the War*. By GEORGE F. KENNAN
- Biography**
- 1917 *Julia Ward Howe*. By LAURA E. RICHARDS and MAUDE HOWE ELLIOTT assisted by FLORENCE HOWE HALL
- 1918 *Benjamin Franklin, Self-Revealed*. By WILLIAM CABELL BRUCE
- 1919 *The Education of Henry Adams*. By HENRY ADAMS
- 1920 *The Life of John Marshall*. By ALBERT J. BEVERIDGE
- 1921 *The Americanization of Edward Bok*. By EDWARD BOK
- 1922 *A Daughter of the Middle Border*. By HAMLIN GARLAND
- 1923 *The Life and Letters of Walter H. Page*. By BURTON J. HENDRICK
- 1924 *From Immigrant to Inventor*. By MICHAEL IDVORSKY PUPIN
- 1925 *Barrett Wendell and His Letters*. By M. A. DE-WOLFE HOWE
- 1926 *The Life of Sir Wm. Osler*. By HARVEY CUSHING
- 1927 *Whitman*. By EMORY HOLLOWAY
- 1928 *The American Orchestra and Theodore Thomas*. By CHARLES EDWARD RUSSELL
- 1929 *The Training of an American. The Earlier Life and Letters of Walter H. Page*. By BURTON J. HENDRICK
- 1930 *The Raven*. By MARQUIS JAMES
- 1931 *Charles W. Eliot*. By HENRY JAMES
- 1932 *Theodore Roosevelt*. By HENRY F. PRINGLE
- 1933 *Grover Cleveland*. By ALLAN NEVINS
- 1934 *John Hay*. By TYLER DENNETT
- 1935 *R. E. Lee*. By DOUGLAS S. FREEMAN
- 1936 *The Thought and Character of William James*. By RALPH BARTON PERRY
- 1937 *Hamilton Fish*. By ALLAN NEVINS
- 1938 *Pedlar's Progress*. By ODELL SHEPARD. Andrew Jackson. By MARQUIS JAMES
- 1939 *Benjamin Franklin*. By CARL VAN DOREN
- 1940 *Woodrow Wilson. Life and Letters*. Vols. VII and VIII. By RAY STANNARD BAKER
- 1941 *Jonathan Edwards*. By OLA ELIZABETH WINSLOW
- 1942 *Crusader in Crinoline*. By FORREST WILSON
- 1943 *Admiral of the Ocean Sea*. By SAMUEL ELIOT MORISON
- 1944 *The American Leonardo: The Life of Samuel F. B. Morse*. By CARLTON MABEE
- 1945 *George Bancroft: Brahmin Rebel*. By RUSSEL BLAINE NYE
- 1946 *Son of the Wilderness*. By LINNIE MARSH WOLFE
- 1947 *The Autobiography of William Allen White*
- 1948 *Forgotten First Citizen: John Bigelow*. By MARGARET CLAPP
- 1949 *Roosevelt and Hopkins*. By ROBERT E. SHERWOOD
- 1950 *John Quincy Adams and the Foundations of American Foreign Policy*. By SAMUEL FLAGG BEMIS
- 1951 *John C. Calhoun: American Portrait*. By MARGARET LOUISE COIT
- 1952 *Charles Evans Hughes*. By MERLO J. PUSEY
- 1953 *Edmund Pendleton 1721-1803*. By DAVID J. MATS
- 1954 *The Spirit of St. Louis*. By CHARLES A. LINDBERGH
- 1955 *The Taft Story*. By WILLIAM S. WHITE
- 1956 *Benjamin Henry Latrobe*. By TALBOT F. HAMLIN
- 1957 *Profiles in Courage*. By JOHN F. KENNEDY
- Poetry**
- 1918* *Love Songs*. By SARA TEASDALE
- 1919* *Old Road to Paradise*. By MARGARET WIDEMER
- Corn Huskers*. By CARL SANDBURG
- 1922 *Collected Poems*. By EDWIN ARLINGTON ROBINSON
- 1923 *The Ballad of the Harp-Weaver; A Few Figs from Thistles; eight sonnets in American Poetry, 1922, A Miscellany*. By EDNA ST. VINCENT MILLAY
- 1924 *New Hampshire: A Poem with Notes and Grace Notes*. By ROBERT FROST
- 1925 *The Man Who Died Twice*. By EDWIN ARLINGTON ROBINSON
- 1926 *What's O'Clock*. By AMY LOWELL
- 1927 *Fiddler's Farewell*. By LEONORA SPEYER
- 1928 *Tristram*. By EDWIN ARLINGTON ROBINSON
- 1929 *John Brown's Body*. By STEPHEN VINCENT BENÉT
- 1930 *Selected Poems*. By CONRAD AIKEN
- 1931 *Collected Poems*. By ROBERT FROST
- 1932 *The Flowering Stone*. By GEORGE DILLON
- 1933 *Conquistador*. By ARCHIBALD MACLEISH
- 1934 *Collected Verse*. By ROBERT HILLYER
- 1935 *Bright Ambush*. By AUDREY WURDEMANN
- 1936 *Strange Holiness*. By ROBERT P. TRISTRAM COFFIN
- 1937 *A Further Range*. By ROBERT FROST
- 1938 *Cold Morning Sky*. By MARTA ZATURENSKA
- 1939 *Selected Poems*. By JOHN GOULD FLETCHER
- 1940 *Collected Poems*. By MARK VAN DOREN
- 1941 *Sunderland Capture*. By LEONARD BACON
- 1942 *The Dust Which Is God*. By WILLIAM ROSE BENÉT
- 1943 *A Witness Tree*. By ROBERT FROST
- 1944 *Western Star*. By STEPHEN VINCENT BENÉT
- 1945 *V-Letter and Other Poems*. By KARL SHAPIRO
- 1947 *Lord Weary's Castle*. By ROBERT LOWELL
- 1948 *The Age of Anxiety*. By W. H. AUDEN
- 1949 *Terror and Decorum*. By PETER VIERECK
- 1950 *Annie Allen*. By GWENDOLYN BROOKS
- 1951 *Complete Poems*. By CARL SANDBURG
- 1952 *Collected Poems*. By MARIANNE MOORE

* Previous to the establishment of this prize in 1922, the 1918 and 1919 awards were made from gifts provided by the Poetry Society.

- 1953 *Collected Poems, 1917-52.* By ARCHIBALD MACLEISH
 1954 *The Waking: Poems 1933-1953.* By THEODORE ROETHKE
 1955 *Collected Poems.* By WALLACE STEVENS
 1956 *Poems: North and South—A Cold Spring.* By ELIZABETH BISHOP
 1957 *Things of This World.* By RICHARD WILBUR
- Music**
 1943 *Secular Cantata No. 2, A Free Song.* By WILLIAM SCHUMAN
 1944 *Symphony No. 4 (Op. 34).* By HOWARD HANSON
 1945 *Appalachian Spring.* By AARON COPLAND
 1946 *The Canticle of the Sun.* By LEO SOWERBY
 1947 *Symphony No. 3.* By CHARLES IVES
 1948 *Symphony No. 3.* By WALTER PISTON
 1949 *Louisiana Story* music. By VIRGIL THOMSON
 1950 *The Consul.* By GIAN-CARLO MENOTTI
 1951 *Music for opera Giants in the Earth.* By DOUGLAS STUART MOORE
 1952 *Symphony Concertante.* By GAIL KUBICK
 1954 *Concerto for Two Pianos and Orchestra.* By QUINCY PORTER
 1955 *The Saint of Bleecker Street.* By GIAN-CARLO MENOTTI
 1956 *Symphony No. 3.* By ERNST TOCH
 1957 *Meditations on Ecclesiastes.* By NORMAN DELLO JOIO
- Special Award**
 1944 *Oklahoma!* By RICHARD RODGERS and OSCAR HAMMERSTEIN 2ND

Overseas Press Club of America Awards, 1956

Best press reporting, daily or wire, from abroad:
 Barrett McGurn, *New York Herald Tribune.*

Best radio or television reporting from abroad:
 Irving R. Levine, NBC.

Best still photo-journalism reporting from abroad:
 John Sadovy, *Life.*

Best filmed photo-journalism reporting from abroad: Gerhard Schwartzkopff, CBS.

Best press, radio or television interpretation of foreign affairs within the U. S.: Cecil Brown, ABC

Best magazine reporting of foreign affairs: Flora Lewis, *N. Y. Times Sunday Magazine.*

¹ Gold Medal in addition to Club plaque. ² Cash award of \$500 in addition to Club plaque. ³ Cash award of \$500 in addition to Club plaque.

Best magazine reporting of events involving persons, places or things beyond the states of the U. S.: the staff of *Sports Illustrated.*

Robert Capa Award, for superlative photography, requiring exceptional courage and enterprise abroad:¹ John Sadovy, *Life.*

George Polk Memorial Award, for best reporting requiring exceptional courage and enterprise abroad:² Russell Jones, *United Press.*

President's Award, to a foreign national who displayed the highest integrity under extreme political, economic or personal harassment:³ Endre (CQ) Marton, *Associated Press.*

List of Motion Picture Academy Awards

PRODUCTION

- Year
 1928 *Wings*, Paramount
 1929 *The Broadway Melody*, M-G-M
 1930 *All Quiet on the Western Front*, Universal
 1931 *Cimarron*, RKO Radio
 1932 *Grand Hotel*, M-G-M
 1933 *Cavalcade*, Fox
 1934 *It Happened One Night*, Columbia
 1935 *Mutiny on the Bounty*, M-G-M
 1936 *The Great Ziegfeld*, M-G-M
 1937 *The Life of Emile Zola*, Warner
 1938 *You Can't Take It With You*, Columbia
 1939 *Gone With the Wind*, Selznick-M-G-M
 1940 *Rebecca*, Selznick-UA
 1941 *How Green Was My Valley*, 20th Century-Fox
 1942 *Mrs. Miniver*, M-G-M
 1943 *Casablanca*, Warner Bros.
 1944 *Going My Way*, Paramount
 1945 *The Lost Weekend*, Paramount
 1946 *The Best Years of Our Lives*, Goldwyn-RKO Radio
 1947 *Gentleman's Agreement*, 20th Century-Fox
 1948 *Hamlet*, Rank-Two Cities-U-I
 1949 *All the King's Men*, Rossen-Columbia

DIRECTOR AND MOVIE

- Frank Borzage, *Seventh Heaven*;
 Lewis Milestone, *Two Arabian Nights*
 Frank Lloyd, *The Divine Lady*
 Lewis Milestone, *All Quiet on the Western Front*
 Norman Taurog, *Skippy*
 Frank Borzage, *Bad Girl*
 Frank Lloyd, *Cavalcade*
 Frank Capra, *It Happened One Night*
 John Ford, *The Informer*
 Frank Capra, *Mr. Deeds Goes to Town*
 Leo McCarey, *The Awful Truth*
 Frank Capra, *You Can't Take It With You*
 Victor Fleming, *Gone With the Wind*
 John Ford, *The Grapes of Wrath*
 John Ford, *How Green Was My Valley*
 William Wyler, *Mrs. Miniver*
 Michael Curtiz, *Casablanca*
 Leo McCarey, *Going My Way*
 Billy Wilder, *The Lost Weekend*
 William Wyler, *The Best Years of Our Lives*
 Ella Kazan, *Gentleman's Agreement*
 John Huston, *Treasure of Sierra Madre*
 Joseph L. Mankiewicz, *A Letter to Three Wives*

- 1950 *All About Eve*, 20th Century-Fox
 1951 *An American in Paris*, M-G-M
 1952 *The Greatest Show on Earth*, Paramount
 1953 *From Here to Eternity*, Columbia
 1954 *On the Waterfront*, Columbia
 1955 *Marty*, United Artists
 1956 *Around the World in 80 Days*, the Michael Todd Co., Inc., U. A.

ACTRESS AND MOVIE

- 1928 Janet Gaynor, *Seventh Heaven*, *Street Angel*, *Sunrise*
 1929 Mary Pickford, *Coquette*
 1930 Norma Shearer, *The Divorcee*
 1931 Marie Dressler, *Min and Bill*
 1932 Helen Hayes, *The Sin of Madelon Claudet*
 1933 Katharine Hepburn, *Morning Glory*
 1934 Claudette Colbert, *It Happened One Night*
 1935 Bette Davis, *Dangerous*
 1936 Luise Rainer, *The Great Ziegfeld*
 1937 Luise Rainer, *The Good Earth*
 1938 Bette Davis, *Jezebel*
 1939 Vivien Leigh, *Gone With the Wind*
 1940 Ginger Rogers, *Kitty Foyle*
 1941 Joan Fontaine, *Suspicion*
 1942 Greer Garson, *Mrs. Miniver*
 1943 Jennifer Jones, *The Song of Bernadette*
 1944 Ingrid Bergman, *Gaslight*
 1945 Joan Crawford, *Mildred Pierce*
 1946 Olivia de Havilland, *To Each His Own*
 1947 Loretta Young, *Farmer's Daughter*
 1948 Jane Wyman, *Johnny Belinda*
 1949 Olivia de Havilland, *The Heiress*
 1950 Judy Holliday, *Born Yesterday*
 1951 Vivien Leigh, *A Streetcar Named Desire*
 1952 Shirley Booth, *Come Back, Little Sheba*
 1953 Audrey Hepburn, *Roman Holiday*
 1954 Grace Kelly, *Country Girl*
 1955 Anna Magnani, *The Rose Tattoo*
 1956 Ingrid Bergman, *Anastasia*

ACTRESS (SUPPORTING ROLE)

- 1936 Gale Sondergaard, *Anthony Adverse*
 1937 Alice Brady, *In Old Chicago*
 1938 Fay Bainter, *Jezebel*
 1939 Hattie McDaniel, *Gone With the Wind*
 1940 Jane Darwell, *The Grapes of Wrath*
 1941 Mary Astor, *The Great Lie*
 1942 Teresa Wright, *Mrs. Miniver*
 1943 Katina Paxinou, *For Whom the Bell Tolls*
 1944 Ethel Barrymore, *None But the Lonely Heart*
 1945 Anne Revere, *National Velvet*
 1946 Anne Baxter, *The Razor's Edge*
 1947 Celeste Holm, *Gentleman's Agreement*
 1948 Claire Trevor, *Key Largo*
 1949 Mercedes McCambridge, *All the King's Men*
 1950 Josephine Hull, *Harvey*
 1951 Kim Hunter, *A Streetcar Named Desire*
 1952 Gloria Grahame, *The Bad and the Beautiful*
 1953 Donna Reed, *From Here to Eternity*
 1954 Eva Marie Saint, *On the Waterfront*
 1955 Jo Van Fleet, *East of Eden*
 1956 Dorothy Malone, *Written on the Wind*

- Joseph L. Mankiewicz, *All About Eve*
 George Stevens, *A Place in the Sun*
 John Ford, *The Quiet Man*

- Fred Zinnemann, *From Here to Eternity*
 Elia Kazan, *On the Waterfront*
 Delbert Mann, *Marty*
 George Stevens, *Giant*

ACTOR AND MOVIE

- Emil Jannings, *The Way of All Flesh*, *The Last Command*
 Warner Baxter, *In Old Arizona*
 George Arliss, *Disraeli*
 Lionel Barrymore, *A Free Soul*
 Fredric March, *Dr. Jekyll and Mr. Hyde*
 Charles Laughton, *Henry VIII*
 Clark Gable, *It Happened One Night*
 Victor McLaglen, *The Informer*
 Paul Muni, *The Story of Louis Pasteur*
 Spencer Tracy, *Captains Courageous*
 Spencer Tracy, *Boys Town*
 Robert Donat, *Goodbye, Mr. Chips*
 James Stewart, *The Philadelphia Story*
 Gary Cooper, *Sergeant York*
 James Cagney, *Yankee Doodle Dandy*
 Paul Lukas, *Watch on the Rhine*

- Bing Crosby, *Going My Way*
 Ray Milland, *The Lost Weekend*
 Fredric March, *The Best Years of Our Lives*
 Ronald Colman, *A Double Life*
 Sir Laurence Olivier, *Hamlet*
 Broderick Crawford, *All the King's Men*
 Jose Ferrer, *Cyrano de Bergerac*
 Humphrey Bogart, *The African Queen*

- Gary Cooper, *High Noon*
 William Holden, *Stalag 17*
 Marlon Brando, *On the Waterfront*
 Ernest Borgnine, *Marty*
 Yul Brynner, *The King and I*

ACTOR (SUPPORTING ROLE)

- Walter Brennan, *Come and Get It*
 Joseph Schildkraut, *The Life of Emile Zola*
 Walter Brennan, *Kentucky*
 Thomas Mitchell, *Stagecoach*
 Walter Brennan, *The Westerner*
 Donald Crisp, *How Green Was My Valley*
 Van Heflin, *Johnny Eager*
 Charles Coburn, *The More the Merrier*

- Barry Fitzgerald, *Going My Way*

- James Dunn, *A Tree Grows in Brooklyn*
 Harold Russell, *The Best Years of Our Lives*
 Edmund Gwenn, *Miracle on 34th Street*
 Walter Huston, *The Treasure of Sierra Madre*
 Dean Jagger, *Twelve O'Clock High*

- George Sanders, *All About Eve*
 Karl Malden, *A Streetcar Named Desire*

- Anthony Quinn, *Viva Zapata!*

- Frank Sinatra, *From Here to Eternity*
 Edmund O'Brien, *The Barefoot Contessa*
 Jack Lemmon, *Mr. Roberts*
 Anthony Quinn, *Lust for Life*

Other Academy Awards for 1956

Art direction (black and white): Cedric Gibbons and Malcolm F. Brown, *Somebody Up There Likes Me*.

Art direction (color): Lyle R. Wheeler and John De Cuir, *The King and I*.

Cinematography (black and white): Joseph Ruttenberg, *Somebody Up There Likes Me*.

Cinematography (color): Lionel Lindon, *Around the World in 80 Days*.

Costume design (black and white): Jean Louis, *The Solid Gold Cadillac*.

Costume design (color): Irene Sharaff, *The King and I*.

Documentary (feature): *The Silent World*, Jacques-Yves Cousteau, producer.

Documentary (short subject): *The True Story of the Civil War*, Louis Clyde Stoumen, producer.

Film editing: Gene Ruggiero and Paul Weatherwax, *Around the World in 80 Days*.

Foreign-language film: *La Strada* (Italian).

Honorary Award: Eddie Cantor, for distinguished service to the industry.

Irving G. Thalberg Memorial Award: Buddy Adler.

Jean Hersholt Humanitarian Award: Y. Frank Freeman.

Music (score of comedy or drama): Victor Young, *Around the World in 80 Days*.

Music (score of musical picture): Alfred Newman and Ken Darby, *The King and I*.

Music (song): "Whatever Will Be, Will Be," Jay Livingston and Ray Evans.

Set decoration (black and white): Edwin B. Willis and F. Keogh Gleason, *Somebody Up There Likes Me*.

Set decoration (color): Walter M. Scott and Paul M. Fox, *The King and I*.

Short subject (cartoon): *Mister Magoo's Puddle Jumper*.

Short subject (1-reel): *Crashing the Water Barrier*.

Short subject (2-reel): *The Bespoke Overcoat*.

Sound recording: Twentieth Century-Fox, Carl Faulkner, sound director, *The King and I*.

Special effects: John P. Fulton, *The Ten Commandments*.

Writing (original screen story): *The Brave One*.

Writing (original screenplay): Albert Lamorrisse, *The Red Balloon*.

Writing (screen adaptation): James Poe, John Farrow and S. J. Perelman, *Around the World in 80 Days*.

New York Film Critics' Awards

(1—best motion picture; 2—best male performance; 3—best feminine performance; 4—best direction; 5—best foreign film; 6—special award.)

1940 1. *The Grapes of Wrath*, 20th Century-Fox

2. Charles Chaplin, *The Great Dictator* (refused award)

3. Katharine Hepburn, *The Philadelphia Story*

4. John Ford, *The Grapes of Wrath*

5. *The Baker's Wife* (French)

1941 1. *Going My Way*, Paramount

2. Barry Fitzgerald, *Going My Way*

3. Tallulah Bankhead, *Lifeboat*

4. Leo McCarey, *Going My Way*

1945 1. *The Lost Weekend*, Paramount

2. Ray Milland, *The Lost Weekend*

3. Ingrid Bergman, *Spellbound* and *The Bells of St. Mary's*

4. Billy Wilder, *The Lost Weekend*

5. (None)

6. *The True Glory* and *The Fighting Lady*

1946 1. *The Best Years of Our Lives*, Goldwyn-RKO

2. James Cagney, *Yankee Doodle Dandy*

3. Agnes Moorehead, *The Magnificent Ambersons*

4. John Farrow, *Wake Island*

5. *Open City* (Italian)

1947 1. *Gentleman's Agreement*, 20th Century-Fox

2. William Powell, *Life With Father*

3. Deborah Kerr, *The Adventuress* and *Black Narcissus*

4. Ella Kazan, *Gentleman's Agreement* and *Boomerang*

5. *To Live in Peace* (Italian)

1948 1. *Treasure of Sierra Madre*, Warner Bros.

2. Sir Laurence Olivier, *Hamlet*

3. Olivia de Havilland, *The Snake Pit*

4. John Huston, *Treasure of Sierra Madre*

5. *Paisan* (Italian)

1949 1. *All the King's Men*, Rossen-Columbia

2. Broderick Crawford, *All the King's Men*

3. Olivia de Havilland, *The Heiress*

4. Carol Reed, *The Fallen Idol*

5. *The Bicycle Thief* (Italian)

1950 1. *All About Eve*, 20th Century-Fox

2. Gregory Peck, *Twelve O'Clock High*

3. Bette Davis, *All About Eve*

4. Joseph L. Mankiewicz, *All About Eve*

5. *Ways of Love* (Franco-Italian)

1951 1. *Watch on the Rhine*, Warner Bros.

2. Paul Lukas, *Watch on the Rhine*

3. Ida Lupino, *The Hard Way*

4. George Stevens, *The More the Merrier*

- 1951 1. *A Streetcar Named Desire*, Warner Bros.
 2. Arthur Kennedy, *Bright Victory*
 3. Vivien Leigh, *A Streetcar Named Desire*
 4. Ella Kazan, *A Streetcar Named Desire*
 5. *Miracle in Milan* (Italian)
- 1952 1. *High Noon*, United Artists
 2. Ralph Richardson, *Breaking the Sound Barrier*
 3. Shirley Booth, *Come Back, Little Sheba*
 4. Fred Zinnemann, *High Noon*
 5. *Forbidden Games* (French)
- 1953 1. *From Here to Eternity*, Columbia
 2. Burt Lancaster, *From Here to Eternity*
 3. Audrey Hepburn, *Roman Holiday*
 4. Fred Zinnemann, *From Here to Eternity*
 5. *Justice Is Done* (French)
 6. *A Queen Is Crowned* (JARO) and *The Conquest of Everest* (JARO)
- 1954 1. *On the Waterfront*, Columbia
 2. Marlon Brando, *On the Waterfront*
 3. Grace Kelly, *The Country Girl*, *Rear Window*, *Dial M for Murder*
 4. Ella Kazan, *On the Waterfront*
- 1955 1. *Marty*, United Artists
 2. Ernest Borgnine, *Marty*
 3. Anna Magnani, *The Rose Tattoo*
 4. David Lean, *Summer-time*
 5. *Diabolique* (French) and *Umberto D.* (Italian)
- 1956 1. *Around the World in 80 Days*, The Michael Todd Co., Inc., U.A.
 2. Kirk Douglas, *Lust For Life*
 3. Ingrid Bergman, *Anastasia*
 4. John Huston, *Moby Dick*
 5. *La Strada* (Italian).

New York Drama Critics' Circle Awards

- 1935-36 *Winterset*, by Maxwell Anderson
 1936-37 *High Tor*, by Maxwell Anderson
 1937-38 *Of Mice and Men*, by John Steinbeck
Shadow and Substance, by Paul Vincent Carroll¹
 1938-39 (No award)
The White Steed, by Paul Vincent Carroll¹
 1939-40 *The Time of Your Life*, by William Saroyan
 1940-41 *Watch on the Rhine*, by Lillian Hellman
The Corn Is Green, by Emlyn Williams¹
 1941-42 (No award)
Bliethe Spirit, by Noel Coward¹
 1942-43 *The Patriots*, by Sidney Kingsley
 1943-44 (No award)
Jacobowsky and the Colonel, by Franz Werfel-S. N. Behrman¹
 1944-45 *The Glass Menagerie*, by Tennessee Williams
 1945-46 (No award)
Carousel, by Richard Rodgers & Oscar Hammerstein II²
 1946-47 *All My Sons*, by Arthur Miller
No Exit, by Jean-Paul Sartre¹
Brigadoon, by Lerner and Loewe²
 1947-48 *A Streetcar Named Desire*, by Tennessee Williams
The Winslow Boy, by Terence Rattigan¹
 1948-49 *Death of a Salesman*, by Arthur Miller
The Madwoman of Chaillot, by Jean Giraudoux - Maurice Valency¹
South Pacific, by Richard Rodgers, Oscar Hammerstein II & Joshua Logan²
 1949-50 *The Member of the Wedding*, by Carson McCullers
The Cocktail Party, by T. S. Eliot¹
The Consul, by Gian-Carlo Menotti²
 1950-51 *Darkness at Noon*, by Sidney Kingsley³
The Lady's Not for Burning, by Christopher Fry¹
Guys and Dolls, by Abe Burrows, Jo Swerling & Frank Loesser²
 1951-52 *I Am a Camera*, by John Van Druten⁴
Venus Observed, by Christopher Fry¹
Pal Joey, by Richard Rodgers, Lorenz Hart & John O'Hara⁵
Don Juan in Hell, by George B. Shaw⁵
 1952-53 *Picnic*, by William Inge
The Love of Four Col-
onels, by Peter Ustinov¹
Wonderful Town, by Joseph Fields, Jerome Chodorov, Betty Comden, Adolph Green & Leonard Bernstein²
 1953-54 *The Teahouse of the August Moon*, by John Patrick
Ondine, by Jean Giraudoux¹
The Golden Apple, by John Latouche & Jerome Moross²
 1954-55 *Cat on a Hot Tin Roof*, by Tennessee Williams
Witness for the Prosecution, by Agatha Christie¹
The Saint of Bleecker Street, by Gian-Carlo Menotti²
 1955-56 *The Diary of Anne Frank*, by Frances Goodrich & Albert Hackett
Tiger at the Gates, by Jean Giraudoux-Christopher Fry¹
My Fair Lady, by Frederick Loewe & Alan Jay Lerner²
 1956-57 *Long Day's Journey Into Night*, by Eugene O'Neill
Waltz of the Toreadors, by Jean Anouilh¹
The Most Happy Fella, by Frank Loesser^{2, 6}

¹ Citation for best foreign play. ² Citation for best musical. ³ Based on a novel by Arthur Koestler. ⁴ Based on Christopher Isherwood's *Berlin Stories*. ⁵ For "distinguished and original contribution to the theater" ⁶ Based on Sidney Howard's *They Knew What They Wanted*.

The Hall of Fame

The Hall of Fame for Great Americans, established in 1900 on the campus of New York University, is an open-air colonnade with busts and tablets for 83 of the 86 persons so far honored for national achievements. New names are voted on every five years by a College of Electors of approximately 100 men and women from all the states. To be elected to the Hall of Fame, an individual must have been dead more than 25 years (before 1922, the stipulation was 10 years), must have been a citizen of the U. S., and must receive a majority vote. Nominations may be made by any citizen. The next election will be held in 1960.

Names	Elected	Names	Elected
John A. Adams (statesman)	1900	James Kent (jurist)	1900
John Quincy Adams (statesman)	1905	Sidney Lanier (poet)	1945
Louis Agassiz (naturalist)	1915	Robert E. Lee (military officer)	1900
Susan B. Anthony (reformer)	1950	Abraham Lincoln (statesman)	1900
John James Audubon (naturalist)	1900	Henry W. Longfellow (poet)	1900
George Bancroft (historian)	1910	James Russell Lowell (poet)	1905
Henry Ward Beecher (clergyman)	1900	Mary Lyon (educator)	1905
Alexander Graham Bell (inventor)	1950	James Madison (statesman)	1905
Daniel Boone (explorer)	1915	Horace Mann (educator)	1900
Edwin Booth (actor)	1925	John Marshall (jurist)	1900
Phillips Brooks (clergyman)	1910	Matthew F. Maury (oceanographer)	1930
William Cullen Bryant (poet)	1910	Maria Mitchell (astronomer)	1905
William Ellery Channing (clergyman)	1900	James Monroe (statesman)	1930
Rufus Choate (lawyer)	1915	Samuel F. B. Morse (inventor)	1900
Henry Clay (statesman)	1900	William T. G. Morton (dentist)	1920
Samuel L. Clemens (author)	1920	John Lothrop Motley (historian)	1910
Grover Cleveland (statesman)	1935	Simon Newcomb (astronomer)	1935
James Fenimore Cooper (author)	1910	Thomas Paine (author)	1945
Peter Cooper (philanthropist)	1900	Alice Freeman Palmer (educator)	1920
Charlotte S. Cushman (actress)	1915	Francis Parkman (historian)	1915
James Buchanan Eads (engineer)	1920	George Peabody (philanthropist)	1900
Jonathan Edwards (clergyman)	1900	William Penn (colonizer)	1935
Ralph Waldo Emerson (author)	1900	Edgar Allan Poe (author)	1910
David G. Farragut (naval officer)	1900	Walter Reed (surgeon)	1945
Stephen C. Foster (song composer)	1940	Theodore Roosevelt (statesman)	1950
Benjamin Franklin (statesman)	1900	Augustus Saint-Gaudens (sculptor)	1920
Robert Fulton (inventor)	1900	William T. Sherman (army officer)	1905
Josiah Willard Gibbs* (physicist)	1950	Joseph Story (jurist)	1900
William Crawford Gorgas (physician)	1950	Harriet Beecher Stowe (author)	1910
Ulysses S. Grant (statesman)	1900	Gilbert Charles Stuart (painter)	1900
Asa Gray (botanist)	1900	Booker T. Washington (educator)	1945
Alexander Hamilton (statesman)	1915	George Washington (statesman)	1900
Nathaniel Hawthorne (author)	1900	Daniel Webster (statesman)	1900
Joseph Henry (physicist)	1915	George Westinghouse* (inventor)	1955
Patrick Henry (statesman)	1920	J. A. McNeill Whistler (painter)	1930
Oliver Wendell Holmes (author)	1910	Walt Whitman (poet)	1930
Mark Hopkins (educator)	1915	Eli Whitney (inventor)	1900
Elias Howe (inventor)	1915	John Greenleaf Whittier (poet)	1905
Washington Irving (author)	1900	Emma Willard (educator)	1905
Andrew Jackson (statesman)	1910	Frances Elizabeth Willard (reformer)	1910
Thomas ("Stonewall") Jackson		Roger Williams (clergyman)	1920
(military officer)	1955	Woodrow Wilson (statesman)	1950
Thomas Jefferson (statesman)	1900	Wilbur Wright* (inventor)	1955
John Paul Jones (naval officer)	1925		

* Not yet represented by a bust and tablet.

AVIATION



Famous Firsts in Aviation

- 1782—First balloon flight. Jacques and Joseph Montgolfier of Annonay, Fr., sent up a small smoke-filled balloon about mid-November.
- 1783—First hydrogen-filled balloon flight. Jacques A. C. Charles, Paris physicist, supervised construction by A. J. and M. N. Robert of a 13-ft. diameter balloon which was filled with hydrogen. It got up to about 3,000 ft. and traveled about 16 mi. in a 45-min. flight (Aug. 27).
- 1783—First human balloon flights. A Frenchman, Jean Pilâtre de Rozier, made the first captive balloon ascension (Oct. 15). With the Marquis d'Arlandes, Pilâtre de Rozier made the first free flight, reaching a peak altitude of about 500 ft., and traveling about 5½ mi. in 20 min. (Nov. 21).
- 1784—First powered balloon. Gen. Jean Baptiste Marie Meusnier developed the first propeller-driven and elliptically-shaped balloon—the crew cranking three propellers on a common shaft to give the craft a speed of about 3 mi. per hr.
- 1784—First woman to fly. Mme. Thible, a French opera singer (June 4).
- 1793—First balloon flight in America. Jean Pierre Blanchard, a French pilot, made it from Philadelphia to near Woodbury, Gloucester Co., N. J., in a little over 45 min. (Jan. 9).
- 1794—First military use of the balloon. Jean Marie Coutelle, using a balloon built for the French Army, made two 4 hr. observation ascents. The military value of the ascents seems to have been in damage to the enemy's morale.
- 1797—First parachute jump. André-Jacques Garnerin dropped from about 6,500 ft. over Monceau Park in Paris in a 23-ft. diameter 'chute made of white canvas with a basket attached (Oct. 22).
- 1843—First air transport company. In London, William S. Henson and John Stringfellow filed articles of incorporation for the Aerial Transit Company (Mar. 24). It failed.
- 1852—First dirigible. Henri Giffard, a French engineer, flew in a controllable (more or less) steam engine-powered balloon, 144 ft. long and 39 ft. in diameter, inflated with 88,000 cu. ft. of coal gas. It reached 6.7 mi. per hr. on a flight from Paris to Trappe (Sept. 24).
- 1860—First aerial photographers. Samuel Archer King and William Black made two photos of Boston, still in existence.
- 1872—First gas-engine powered dirigible. Paul Haenlein, a German engineer, flew in a semi-rigid frame dirigible, powered by a 4-cylinder internal combustion engine running on coal gas drawn from the supporting bag.
- 1873—First transatlantic attempt. *The New York Daily Graphic* sponsored the attempt with a 400,000 cu. ft. balloon carrying a lifeboat. A rip in the bag during inflation brought collapse of the balloon and the project.
- 1897—First successful metal dirigible. An all-metal dirigible, designed by David Schwarz, a Hungarian, took off from Berlin's Tempelhof Field and, powered by a 16-hp. Daimler engine, got several miles before leaking gas caused it to crash (Nov. 13).
- 1900—First Zeppelin flight. Germany's Count Ferdinand von Zeppelin flew the first of his long series of rigid-frame airships. It attained a speed of 18 mi. per hr. and got 3½ mi. before its steering gear failed (July 2).
- 1903—First successful heavier-than-air machine flight. Aviation was really born on the sand dunes at Kitty Hawk, N. C., when Orville Wright crawled to his prone position between the wings of the biplane he and his brother Wilbur had built, opened the throttle of their home-made 12-hp. engine and took to the air. He covered 120 ft. in 12 sec. Later that day, in one of four flights, Wilbur stayed up 59 sec. and covered 852 ft. (Dec. 17).
- 1904—First airplane maneuvers. Orville Wright made the first turn with an airplane (Sept. 15); 5 days later his brother Wilbur made the first complete circle.
- 1905—First airplane flight over half an hour. Orville Wright kept his craft up 33 min. 17 sec. (Oct. 4.).
- 1906—First European airplane flight. Alberto Santos-Dumont, a Brazilian, flew a heavier-than-air machine at Bagatelle Field, Paris (Sept. 13).
- 1908—First airplane fatality. Lt. Thomas E. Selfridge, U. S. Army Signal Corps, was in a group of officers evaluating the Wright plane at Fort Myer, Va. He was up about 75 ft. with Orville Wright when the propeller hit a bracing wire and was broken, throwing the plane out of control, killing Selfridge and seriously injuring Wright (Sept. 17).
- 1910—First licensed woman pilot. Baroness Raymonde de la Roche of France, who

- learned to fly in 1909, received ticket No. 36 on March 8.
- 1910—First flight from shipboard. Lt. Eugene Ely, USN, took a Curtiss plane off from the deck of cruiser *Birmingham* at Hampton Roads, Va., and flew to Norfolk (Nov. 14). The following January he reversed the process, flying from Camp Selfridge to the deck of the battleship *Pennsylvania* in San Francisco Bay (Jan. 18).
- 1911—First U. S. woman pilot. Harriet Quimby, a magazine writer, who got ticket No. 37.
- 1913—First multi-engined aircraft. Built and flown by Igor Ivan Sikorsky while still in his native Russia.
- 1914—First aerial combat. In August, Allied and German pilots and observers started shooting at each other with pistols and rifles—with negligible results.
- 1915—First air raids on England. German Zeppelins started dropping bombs on four English communities (Jan. 19).
- 1918—First U. S. air squadron. The U. S. Army Air Corps made its first independent raids over enemy lines, in DH-4 planes (British-designed) powered with 400-hp. American-designed Liberty engines (Apr. 8).
- 1918—First regular airmail service. Operated for the Post Office Department by the Army, the first regular service was inaugurated with one round trip a day (except Sunday) between Washington, D. C., and New York City (May 15).
- 1919—First transatlantic flight. The NC-4, one of four Curtiss flying boats commanded by Lt. Comdr. Albert C. Read, reached Lisbon, Port. (May 27) after hops from Trepassy Bay, Nfld. to Horta, Azores (May 16-17), to Ponta Delgada (May 20). The Liberty-powered craft was piloted by Walter Hinton.
- 1919—First nonstop transatlantic flight. Capt. John Alcock and Lt. Arthur Whitten Brown, British World War I flyers, made the 1,900 mi. from St. John's, Nfld. to Clifden, Ire., in 16 hr. 12 min. in a Vickers-Vimy bomber with two 350-hp. Rolls-Royce engines (June 15-16).
- 1919—First lighter-than-air transatlantic flight. The British dirigible R-34, commanded by Maj. George H. Scott, left Firth of Forth, Scot. (July 2) and touched down at Mineola, L. I., 108 hr. later. The eastbound trip was made in 75 hr. (completed July 13).
- 1919—First scheduled passenger service (using airplanes). Aircraft Travel and Transport inaugurated London-Paris service (Aug. 25). Later the company started the first trans-channel mail service on the same route (Nov. 10).
- 1921—First naval vessel sunk by aircraft. Two battleships being scrapped by treaty were sunk by bombs dropped from Army planes in demonstration put on by Brig. Gen. William S. Mitchell (July 21).
- 1921—First helium balloon. The C-7, non-rigid Navy dirigible was first to use non-inflammable helium as lifting gas, making a flight from Hampton Roads, Va., to Washington, D. C. (Dec. 1).
- 1922—First member of Caterpillar Club. Lt. (later Maj. Gen.) Harold Harris bailed out of a crippled plane he was testing at McCook Field, Dayton, Ohio (Oct. 20), and became the first man to join the Caterpillar Club—those whose lives have been saved by parachute.
- 1923—First nonstop transcontinental flight. Lts. John A. Macready and Oakley Kelly flew a single-engine Fokker T-2 nonstop from New York to San Diego, a distance of just over 2,500 mi. in 26 hr. 50 min. (May 2-3).
- 1923—First autogyro flights. Juan de la Cierva, brilliant Spanish mathematician, made the first successful flight in a rotary wing aircraft in Madrid (June 9).
- 1924—First round-the-world flight. Four Douglas Cruiser biplanes of the U. S. Army Air Corps took off from Seattle under command of Maj. Frederick Martin (Apr. 6). 175 days later two of the planes (Lt. Lowell Smith's and Lt. Erik Nelson's) landed in Seattle after a circuitous route—one source saying 26,345 mi., another saying 27,553 mi.
- 1926—First polar flight. Then-Lt. Cmdr. Richard E. Byrd, acting as navigator, and Floyd Bennett as pilot, flew a trimotor Fokker from Kings Bay, Spitsbergen, over the North Pole and back in 15½-hr. flight (May 8-9).
- 1927—First solo transatlantic flight. Charles Augustus Lindbergh lifted his Wright-powered Ryan monoplane, *Spirit of St. Louis*, from Roosevelt Field, L. I., to stay aloft 33 hr. 39 min. and cover 3,600 mi. to Le Bourget Field outside Paris (May 20-21).
- 1927—First transatlantic passenger. Charles A. Levine was piloted by Clarence D. Chamberlin from Roosevelt Field, L. I., to Eisleben, Ger., in a Wright-powered Bellanca (June 4-5).
- 1928—First east-west transatlantic crossing. Baron Guenther von Huenefeld, piloted by German Capt. Hermann Koehl and Irish Capt. James Fitzmaurice, left Dublin for New York City (Apr. 12) in a single-engine all-metal Junkers monoplane. Some 37 hr. later they cracked up on Greely Island, Labrador. Rescued.
- 1928—First U. S.-Australia flight. Sir Charles Kingsford-Smith and Capt. Charles T. P. Ulm, Australians, and two American navigators, Harry W. Lyon and James Warner, crossed the Pacific from Oakland to Brisbane. They went via

- Hawaii and the Fiji Islands in a trimotor Fokker (May 31-June 8).
- 1928—First trans-Arctic flight. Sir Hubert Wilkins, Australian explorer, piloted by Carl Ben Eielson, flew from Point Barrow, Alaska, to Spitsbergen (mid-April).
- 1929—First of the endurance records. With Air Corps Maj. Carl Spaatz in command and Capt. Ira Eaker as chief pilot, an Army Fokker, aided by refueling in the air, remained aloft 150 hr. 40 min. at Los Angeles (Jan. 1-7).
- 1929—First blind flight. James H. Doolittle proved the feasibility of instrument flying when he took off and landed entirely on instruments (Sept. 24).
- 1929—First rocket engine flight. Fritz von Opel, German auto maker, stayed aloft in his small rocket-powered craft for 75 sec., covering nearly 2 mi. (Sept. 30).
- 1929—First South Pole flight. Comdr. Richard E. Byrd, with Bernt Balchen as pilot, Harold I. June, radio operator, and Capt. A. C. McKinley, photographer, flew a trimotor Fokker from the Bay of Whales, Little America, over the South Pole and back (Nov. 28-29).
- 1930—First Paris-New York nonstop flight. Dieudonné Coste and Maurice Bellonte, French pilots, flew a Hispano-powered Breguet biplane from Le Bourget Field to Valley Stream, L. I., in 37 hr. 18 min. (Sept. 2-3).
- 1931—First flight into the stratosphere. Prof. Auguste Piccard, Swiss physicist, and Charles Knipfer, ascended in a balloon from Augsburg, Ger., and reached a height of 51,793 ft. in a 17-hr. flight that terminated on a glacier near Innsbruck, Austria (May 27).
- 1931—First nonstop transpacific flight. Hugh Herndon and Clyde Pangborn took off from Sabishiro Beach, Japan, dropped their landing gear and flew 4,860 mi. to near Wenatchee, Wash., in 41 hr. 13 min. (Oct. 4-5).
- 1932—First woman's transatlantic solo. Amelia Earhart, flying a Pratt & Whitney Wasp-powered Lockheed Vega, flew alone from Harbor Grace, Nfld., to Ireland in approximately 15 hr. (May 20-21).
- 1932—First westbound transatlantic solo. James A. Mollison, British pilot, took a de Havilland Puss Moth from Portmarnock, Ire., to Pennfield, N. B. (Aug. 18).
- 1932—First woman airline pilot. Ruth Rowland Nichols, first woman to hold three international records at the same time—speed, distance, altitude—was employed by N. Y.-New England Airways.
- 1933—First round-the-world solo. Wiley Post took a Lockheed Vega, *Winnie Mae*, 15,596 mi. around the world in 7 days 18 hr. 49½ min. (July 15-22).
- 1937—First successful helicopter. Hanna Reitsch, German woman pilot, flew Dr. Heinrich Focke's FW-61 in free, fully-controlled flight at Bremen (July 4).
- 1939—First turbojet flight. Just before their invasion of Poland, the Germans flew a Heinkel He-178 plane powered by a Heinkel S3B turbojet (Aug. 27).
- 1942—First American jet plane flight. Robert Stanley, chief pilot for Bell Aircraft Corp., flew the Bell XP-59 *Airacomet* at Muroc Army Base, Calif. (Oct. 1).
- 1947—First piloted supersonic flight in an airplane. Capt. Charles E. Yeager, U. S. Air Force, flew the X-1, rocket-powered research plane built by Bell Aircraft Corp., faster than the speed of sound at Muroc Air Force Base, Calif. (Oct. 14).
- 1949—First round-the-world nonstop flight. Capt. James Gallagher and USAF crew of 13 flew a Boeing B-50A Superfortress around the world nonstop from Ft. Worth, Tex., returning to same point; 23,452 mi. in 94 hr. 1 min., with 4 aerial refuelings enroute (Feb. 27-Mar. 2).
- 1950—First nonstop transatlantic jet flight. Col. David C. Schilling (USAF) flew 3,300 mi. from England to Limestone, Maine, in 10 hr. 1 min. (Sept. 22).
- 1950—First jet-plane battle. Four U. N. jets attacked by 8 to 12 Communist jets near Sinuiju, Korea. One enemy jet reported shot down; no U. N. losses (Nov. 8).
- 1951—First solo across North Pole. Charles F. Blair, Jr., flew a converted P-51 (May 29).
- 1952—First jetliner service. De Havilland Comet flight inaugurated by BOAC between London and Rome (Apr. 21). Round trip: 4 hr. 46 min. flying time.
- 1952—First transatlantic helicopter flight. Capt. Vincent H. McGovern and 1st Lt. Harold W. Moore piloted 2 Sikorsky H-19s from Westover, Mass., to Prestwick, Scot. (3,410 mi.). Trip was made in 5 steps, with flying time of 42 hr. 25 min. (July 15-31).
- 1952—First transatlantic round trip in same day. British Canberra twin-jet bomber flew from Aldergrove, N. Ire., to Gander, Nfld., and back in 7 hr. 59 min. flying time (Aug. 26).
- 1955—First transcontinental round trip in same day. Lt. John M. Conroy piloted F-86 Sabrejet across U. S. (Los Angeles-New York) and back—5,085 mi.—in 11 hr. 33 min. 27 sec. (May 21).
- 1957—First round-the-world, nonstop jet plane flight. Maj. Gen. Archie J. Old, Jr., USAF, led a flight of 3 Boeing B-52 bombers, powered with 8 10,000-lb.-thrust Pratt & Whitney Aircraft J57 engines around the world in 45 hrs., 19 min.; distance 24,325 mi.; average speed 525 m.p.h. (Completed Jan. 18.)

International Airplane Records

Source: National Aeronautic Association.

(Speed over measured straightaway course)

Speed (mph)	Date	Type plane	Pilot	Place
266.58	Nov. 4, '23	Curtiss	Lt. Williams (U.S.A.)	Mineola
278.48	Dec. 11, '24	Ferbois	Adj. Bonnet (France)	Istres
294.38	Sept. 5, '32	Gee Bee Racer	Maj. J. H. Doolittle (U.S.A.)	Cleveland
304.98	Sept. 4, '33	Wedell-Williams	James R. Wedell (U.S.A.)	Glenview, Ill.
314.32	Dec. 25, '34	Caudron	Raymond Delmotte (France)	Istres
352.39	Sept. 13, '35	Hughes Special	Howard Hughes (U.S.A.)	Santa Anna
379.63	Nov. 11, '37	BF-113R	Herman Wurster (Germany)	Augsburg
469.22	Apr. 26, '39	ME-109R	Fritz Wendel (Germany)	Augsburg
606.25	Nov. 7, '45	Gloster Meteor IV	Gp. Capt. H. Wilson (Gr. Britain)	Herne Bay
615.78	Sept. 7, '46	Gloster Meteor	Gp. Capt. E. M. Donaldson (Gr. Britain)	Little Hampton
650.80	Aug. 25, '47	Douglas D-558	Maj. Marion Carl, USMC (U.S.A.)	Muroc AF, Calif.
670.98	Sept. 15, '48	North American F-86A	Maj. R. L. Johnson (USAF)	Muroc AF, Calif.
698.51	Nov. 19, '52	North American F-86D	Capt. James S. Nash (USAF)	Salton Sea, Calif.
755.15	Oct. 29, '53	North American YF	Lt. Col. F. K. Everest, Jr. (USAF)	Salton Sea, Calif.
822.27	Aug. 20, '55	North American F-100C	Col. Horace A. Hanes (U.S.A.)	Palmdale, Calif.
1,132.14	Mar. 10, '56	Fairley Delta 2	L. Peter Twiss, D.S.C. (Gr. Britain)	Ford-Chichester, Eng.

(Fastest U. S. transcontinental—Lt. Col. Robert R. Scott, Republic F-84F from Los Angeles International Airport to Floyd Bennett Field, N. Y.—2,445.9 mi. in 3 hrs., 44 min., 54 sec., average speed 652.5 mph.—Mar. 9, 1955.)

Distance (Straight Line)

Distance (mi.)	Date	Crew	From	To
3,352.91	Oct. 28-29, '26	Lt. Costes & Capt. Rignot (France)	Le Bourget	Jask
3,910.90	June 4-6, '27	Clarence D. Chamberlin, C. A. Levine (U.S.A.)	New York	Eisleben, Germany
4,466.57	July 3-5, '28	Majs. A. Ferrarin, Del Prete (Italy)	Rome	Touros
4,911.93	Sept. 27-29, '29	Costes & Bellonte (France)	Le Bourget	Moulant
5,011.35	July 28-30, '31	Russel N. Boardman, John Polando (U.S.A.)	New York	Istanbul
5,656.93	Aug. 5-7, '33	Maurice Rossi, Paul Codos (France)	New York	Ryack
6,305.66	July 12-14, '37	Col. M. Gromov, Youmachiev, Daniline (U.S.S.R.)	Moscow	San Jacinto, Calif.
7,158.44	Nov. 5-7, '38	Sqd. Ldr. R. Kellett (Gr. Britain)	Ismalia (Suez)	Darwin
7,916.00	Nov. 19-20, '45	Col. C. S. Irvine & Lt. Col. G. R. Stanley, (U.S.A.)	Guam	Washington, D. C.
11,235.60	Sept. 29-Oct. 1, '46	Comdr. Thomas D. Davies, Comdrs. Eugene P. Ranklin, Walter S. Reid, Lt. Comdr. Ray A. Tabeling (U.S.A.)	Perth, Australia	Columbus, Ohio

(Longest light airplane distance and longest solo, international—William P. Odom, U. S. Beech Bonanza (185 hp.) from Honolulu, Hawaii to Teterboro, N. J., 4,957.24 mi., March 8-9, 1949.)

Distance (Closed Course)

Distance (mi.)	Date	Crew	Place
2,895.970	Aug. 3-5, '27	Edzard & Ristics (Germany)	Dessau
4,763.800	June 1-2, '28	Capt. Ferrarin & Del Prete (Italy)	Casal e del Paati
4,988.969	Dec. 15-17 '30	Costos & Codos (France)	Istres
5,088.267	May 31—June 2, '30	Maj. U. Maddalena & Lt. F. Cecconi (Italy)	Montecelio
6,444.881	June 7-10, '31	J. LeBrix & M. Doret (France)	Istres
6,587.441	Mar. 23-26, '32	Bossoutrot & Rossi (France)	Oran
7,239.588	May 13-15, '38	Comm. Fujita & Sgt. Maj. Takahashi (Japan)	Kisarazu
8,037.899	July 30—Aug. 1 '39	Angelo Tondi, Roberto Dagasso, Ferruccio Vignoli (Italy)	Rome
8,854.308	Aug. 1-2, '47	Lt. Col. O. F. Lassiter (U.S.) Capt. W. J. Valentine (U.S.)	Tampa, Fla.

Altitude

Height (feet)	Date	Crew	Place
38,419	July 25, '27	Lt. C. C. Champion (U.S.A.)	Washington
41,795	May 26, '29	Willi Neuenhofen (Germany)	Dessau
43,166	June 4, '30	Lt. Apollo Soucek (U.S.A.)	Washington
43,976	Sept. 16, '32	Capt. Cyril F. Uwins (Gr. Britain)	Filton, Bristol
44,819	Sept. 28, '33	G. Lemoine (France)	Villacoublay
47,352	April 11, '34	Comm. Renato Donaff (Italy)	Rome
49,944	Sept. 28, '36	Sqd. Ldr. S. R. D. Swain (Gr. Britain)	South Farnborough
53,937	June 30, '37	Fl. Lt. M. J. Adam (Britain)	Farnborough
56,046	Oct. 22, '38	Col. Mario Pezzi (Italy)	Montecelio
59,445*	Mar. 23, '48	John Cunningham (Gr. Britain)	Hatfield
63,668*	May 4, '53	Walter F. Gibb (Gr. Britain)	Bristol
65,889*	Aug. 29, '55	Walter F. Gibb (Gr. Britain)	Bristol

* Jet-propelled aircraft.

Absolute Altitude—72,394.795 ft. Capts. Orvil Anderson & Albert Stevens, U. S., Nov. 11, 1935 from Rapid City, S. D., in balloon. U. S. Airplane Record—47,910 ft. Maj. F. F. Ross, pilot, Lt. D. M. Davis, copilot, Lts. L. B. Barrier, C. B. Webster, F/O P. Morrisett, Sgt. W. S. George, Harmon Field, Guam, May 15, 1946, Boeing B-29.

Helicopter Records

Source: National Aeronautic Association.

DISTANCE, AIRLINE

International: 1,217.14 mi.

Elton J. Smith (U. S.) in Bell 47-D1 helicopter powered by 200-hp. Franklin; from Ft. Worth, Tex., to Niagara Falls, N. Y., Sept. 17, 1952.

DISTANCE, CLOSED CIRCUIT

International: 1,199.078 mi.

Lt. Col. Harry L. Bush and Maj. William C. Dysinger (USA) in Vertol H21-C helicopter powered by 1275-hp. Wright R-1820-103; Robbinsville, N. J., Aug. 11, 1956.

ALTITUDE

International: 26,931 ft.

Jean Boulet (France) in S.E. "Alouette" helicopter powered by 400-hp. Turbomeca Artouste II; Buc Airport, June 6, 1955.

MAXIMUM SPEED

International: 162.743 mph.

Maj. Roy L. Anderson (USMC), pilot, Robert S. Decker, co-pilot (U. S.), in Sikorsky HR2S-1 helicopter powered by 2 Pratt & Whitney R-2800-54 engines; Windsor Locks, Conn., Nov. 11, 1956.

SPEED FOR 100 K.M. (CLOSED COURSE)

International: 141.915 mph.

Cpts. Claude E. Hargett & Ellis D. Hill (USA) in Sikorsky H-34 helicopter powered by 1275-hp. Wright R-1820; Milford, Conn., July 12, 1956.

SPEED FOR 500 K.M. (CLOSED CIRCUIT)

International: 136.014 mph.

Cpts. Claude E. Hargett & Ellis D. Hill (USA) in Sikorsky H-34 helicopter powered by 1275-hp. Wright R-1820; Milford, Conn., July 12, 1956.

SPEED FOR 1,000 K.M. (CLOSED CIRCUIT)

International: 132.633 mph.

Cpts. Claude E. Hargett & Ellis D. Hill (USA) in Sikorsky H-34 helicopter powered by 1275-hp. Wright R-1820; Milford, Conn., July 12, 1956.

Certificated U. S. Airplane Pilots

Source: Civil Aeronautics Administration.

Year (As of Dec. 31)	Total	Airline transport	Com- mercial	Private
1939.....	33,706	1,197	11,677	20,832
1940.....	69,829	1,431	18,791	49,607
1941.....	129,947	1,587	34,578	93,782
1942.....	166,626	2,177	55,760	108,689
1943.....	173,206	2,315	63,940	106,950
1944.....	183,383	3,046	68,449	111,888
1945.....	296,895	5,815	162,873	128,207
1946.....	400,061	7,654	203,251	189,156
1947.....	433,241 ¹	7,059 ¹	181,912 ¹	244,270 ¹
1948.....	491,306 ²	7,762 ²	176,845 ²	306,699 ²
1949.....	525,174	9,025	187,769	328,380
1951.....	580,574	10,813	197,000	371,861
1952.....	581,218	11,357	193,575	376,286
1953.....	585,974	12,757	195,363	377,854
1954.....	613,695	13,341	201,441	398,913
1955.....	643,201	13,700	211,142	418,359

¹ As of April 1, 1948. ² As of May 1, 1949. NOTE: No figures available for 1950.

U. S. Scheduled Airlines, 1956

Source: Civil Aeronautics Board.

Airline	Certificated route mileage ¹	Revenue passenger- miles, 1956
Domestic (Trunk)		
American.....	25,745	4,793,023,000
Braniff.....	12,820	717,594,000
Capital.....	10,969	1,019,462,000
Colonial ²		
Continental #29.....	6,259	259,285,000
Delta.....	15,302	1,124,160,000
Eastern ²	21,135	3,827,157,000
National.....	3,383	944,903,000
Northeast.....	6,892	119,254,000
Northwest.....	10,604	871,580,000
Trans World (TWA).....	20,816	3,260,825,000
United.....	18,259	4,248,878,000
Western.....	6,593	457,019,000
Total.....	158,777	21,643,140,000
Domestic (Local Service)		
Allegheny.....	2,740	64,327,000
Bonanza.....	1,491	27,641,000
Central.....	4,061	19,509,000
Continental #64.....	1,854	
Frontier.....	5,119	52,100,000
Helicopter (Chicago).....	294	14,000
Helicopter (Los Angeles).....	389	764,000
Helicopter (New York).....	222	800,000
Lake Central.....	1,843	20,817,000
Mohawk.....	2,031	63,352,000
North Central.....	3,257	83,052,000
Ozark.....	3,716	48,497,000
Piedmont.....	3,766	76,483,000
Southern.....	2,158	32,350,000
Southwest.....	1,708	55,917,000
Trans-Texas.....	4,251	49,840,000
West Coast.....	2,318	37,747,000
Total.....	41,218	633,210,000
Foreign or Overseas		
Aerovias Sud Americana ³	3,292	
American.....	1,538	98,970,000
Braniff.....	8,361	69,452,000
Caribbean Atl.....	462	12,774,000
Colonial ²		
Delta.....	3,630	64,837,000
Eastern ²	5,607	336,282,000
Hawaiian.....	389	57,838,000
Mackey ⁴	831	12,265,000
Midet ⁴		
National.....	114	61,956,000
Northwest.....	20,258	222,541,000
Pan American.....	164,197	3,162,406,000
Panagra.....	10,438	168,650,000
Resort.....	13,645	(⁵)
Riddle ³	2,309	
Samoan.....	93	(⁵)
Seaboard & Western ⁵	15,055	
South Pacific.....	2,776	(⁵)
Trans-Pacific.....	379	26,032,000
Trans World (TWA).....	40,395	673,830,000
United.....	2,898	241,516,000
UMCA.....	378	573,000
Western.....	1,640	(⁵)
Total.....	298,685	5,209,922,000

¹ As of December 31, 1956. ² Colonial mileages included with Eastern; merged June 1, 1956. ³ All-cargo carrier. ⁴ Mackey-Midet merged December 3, 1956. ⁵ Not operating.

Representative American Aircraft Types

Sources for tables on this page: Civil Aeronautics Administration.

Manufacturer ¹	Model	Max. std. seats	No. and make engine	Max. hp. per engine	Never exceed speed mph	Normal oper. speed (cruise)	Max. weight	Span	Length
Transport									
Boeing Airplane Co.....	377	93	4 P & W	3500	351	312	145,800	141' 3"	110' 4"
Convair Div.....	240	51	2 P & W	2400	306	270	42,500	91' 9"	74' 8"
	340	51	2 P & W	2400	306	270	46,500	105' 8"	79' 2"
	440	52	2 P & W	2500	310	289	49,100	105' 4"	81' 6"
Douglas A. C.....	DC-3	35	2 P & W	1200	262	217	26,900	95' 0"	64' 5½"
	DC-4	86	4 P & W	1450	300	250	73,000	117' 6"	93' 5"
	DC-6	87	4 P & W	2400	360	300	97,200	117' 6"	100' 7"
	DC-6A, B	112	4 P & W	2500	360	300	107,000	117' 6"	108' 11"
	DC-7	99	4 Wright	3250	360	310	122,200	117' 6"	108' 11"
	DC-7C	99	4 Wright	3700	406	359	140,000	127' 6"	112' 4"
Lockheed A. Corp.....	749	87	4 Wright	2500	324	271	107,000	123' 0"	95' 3"
	1049	96	4 Wright	2800	338	300	120,000	123' 0"	95' 3"
	1049G	112	4 Wright	3250	338	300	137,500	123' 0"	113' 6"
	1649A	99	4 Wright	3400	338	300	156,000	150' 0"	113' 6"
G. L. Martin Co.....	202A	53	2 P & W	2400	292	255	43,000	93' 3½"	71' 4"
	404	53	2 P & W	2400	301	265	44,900	93' 3½"	74' 7"
Personal & Executive									
Aero Des. & Eng. Co.....	560	7	2 Lycoming	270	270	200	6,000	44' 0"	35' 5"
	680	7	2 Lycoming	340	270	210	7,000	44' 0"	35' 5"
Aeronca Mfg. Corp.....	15AC	4	1 Continental	145	139	110	2,050	37' 6"	25' 3"
Beech A. Corp.....	H50	6	2 Lycoming	340	270	205	7,000	45' 3"	31' 6"
	H35	4	1 Continental	240	210	175	2,900	32' 10"	25' 2"
	E18S	10	2 P & W	450	256	205	9,300	47' 7"	33' 11½"
Cessna A. C.....	172	4	1 Continental	145	160	140	2,200	36' 0"	25' 0"
	180	4	1 Continental	225	184	160	2,550	36' 0"	25' 0"
	182	4	1 Continental	230	184	160	2,550	36' 0"	25' 0"
	195B	5	1 Jacobs	275	200	178	3,350	36' 2"	27' 4"
	310	5	2 Continental	240	246	200	4,600	36' 0"	27' 0"
Helio A. Corp.....	H-391B	4	1 Lycoming	260	189	150	2,800	35' 0"	27' 3"
Piper A. Corp.....	PA-18	2	1 Lycoming	150	138	...	1,760	...	...
	PA-22	4	1 Lycoming	125	158	126	1,800	29' 4"	20' 7"
	PA-23	4	2 Lycoming	150	208	165	3,500	37' 0"	27' 1"
Ryan Aero. Co.....	Navion B	4	1 Lycoming	260	190	169	2,850	33' 4½"	27' 3"
Taylorcraft, Inc.....	20	4	1 Continental	208	170	141	2,750	...	...
Temco A. Corp.....	D16A (Twin Navion)	4	2 Lycoming	160	180	...	4,600	33' 5"	27' 2"
Helicopters									
Bell A. Corp.....	47G	3	1 Franklin	200	90	...	2,350	...	...
Cessna A. C., Helicopter Div.....	47J	4	1 Lycoming	220	105	...	2,565	...	...
	CH-1A	4	1 Continental	260	122	...	3,000	...	...
Doman Helicopters, Inc.....	LZ-5	6	1 Lycoming	400	90	...	5,200	...	...
Hiller Helicopters.....	UH-12C	3	1 Franklin	200	84	...	2,500	...	...
Kaman A. Corp.....	K-240	2	1 Lycoming	250	87	...	3,000	...	...
Sikorsky A. Div.....	S-52-2	4	1 Franklin	245	115	...	2,700	...	...
	S-55	12	1 P & W	550	...	...	7,200	...	...
	S-58	14	1 Wright	1525	138	...	12,700	...	...
Vertol.....	42	21	1 Wright	1425	125	...	14,000	...	...

¹ A. C.—Aircraft Company; A. Corp.—Aircraft Corporation; A. Div.—Aircraft Division.

U. S. Warplane Production Record, 1940-45

Type	1940	1941	1942	1943	1944	1945	1940-45
Total.....	6,019	19,433	47,836	85,898	96,318	47,714	303,218
Bombers.....	1,191	4,115	12,627	29,355	35,003	16,492	98,783
Fighters.....	1,685	4,416	10,769	23,988	38,873	21,696	101,427
Photographic and reconnaissance.....	121	727	1,468	734	259	531	3,840
Transport.....	290	532	1,984	7,012	9,834	4,629	24,281
Trainer.....	2,731	9,373	17,631	19,939	7,577	1,309	58,560
Other*.....	1	270	3,357	4,870	4,772	3,057	16,327

* Includes special purpose, rotary wing, and liaison aircraft.

Important American Aircraft Types (U. S. Air Force)

Source: U. S. Department of Defense.

Type	Manufacturer	Power plant ¹	Maximum take-off ratings	Span, ft.	Length, ft.	Height, ft.	Weight	Speed	Crew
BOMBERS									
B-26A thru F	Douglas	2 R2800 P-79	2,000 hp.	70.0	51.3	18.5	40,000	Over 300 ³	3
B-29 & B-29A	Boeing	4 R3350 W-57 or 57A	2,200 hp.	141.2	99.0	27.8	140,000	345 ²	11
B-36D thru J	Convair	6 R4360 PW-53	3,800 hp.	230.0	162.1	46.8	370,000	Over 435	15
		4 J47 GE-19	52,000 lb.						
B-47E	Boeing	6 J47 GE-25	6,000 lb.	116.0	107.1	28.0	200,000	600 class	3
B-50B	Boeing	4 R4360 PW-35	3,500 hp.	141.2	99.0	32.7	170,000	Over 400	10
B-52A	Boeing	8 J57 P-1	10,000 lb.	185.0	156.5	48.3	350,000	Over 600	6
B-57B	Martin	2 J65 W-5	7,200 lb.	64.0	65.5	14.8	50,000	Over 500 ³	2
B-66	Douglas	2 J71 A-9	.....	72.5	75.1	23.6	.....	600-700	3
FIGHTERS									
F-80C	Lockheed	1 J33 A-31 or 35	5,200 lb.	38.9	34.5	11.3	16,000	600 class	1
RF-84F	Republic	1 J65 W-3	7,200 lb.	33.6	47.4	15.0	25,000	Over 650	1
F-84G	Republic	1 J35 A-29	5,600 lb.	36.4	38.1	12.6	18,000	600 class	1
F-86D	North American	1 J47 GE-33	7,650 lb. ³	37.1	40.3	15.0	18,000	650 class	1
F-86F	North American	1 J47 GE-27	5,910 lb.	37.1	37.5	14.7	17,000	650 class	1
F-86H	North American	1 J73 GE-3	.....	37.1	38.8	15.0	.....	Over 650	1
F-89C	Northrop	2 J35 A-33	5,400 lb.	56.1	53.4	17.6	40,000	600 class	2
F-89D	Northrop	2 J35 A-35	5,600 lb.	57.8	53.8	17.5	40,000	600 class	2
F-94C	Lockheed	1 J48 P-5	6,250 lb.	37.3	44.5	14.9	20,000	600 class	2
F-100A	North American	1 J57 P-7	10,000 lb.	38.6	47.8	15.3	.....	Supersonic	1
F-101A	McDonnell	2 J57 P-13	10,000 lb.	39.7	67.4	18.0	.....	Supersonic	1
F-102A	Convair	1 J57 P-23	10,000 lb.	38.0	68.0	20.0	.....	Supersonic	1
F-104A	Lockheed	J-79	.....	.....	.....	.....	.....	Ultrasonic	1
TRANSPORTS									
C-45H	Beech	2 R985-AN-14B P	450 hp.	47.6	34.2	10.7	9,000	190 top ³	2
C-47D	Douglas	2 R1830-90D P	1,200 hp.	95.0	64.4	16.9	33,000	200 top ³	5
C-54G	Douglas	4 R2000-9 P	1,450 hp.	117.5	93.8	27.5	82,500	300 top	3
C-74	Douglas	4 R4360-49 P	3,500 hp.	173.3	124.2	43.8	165,000	Over 300	5
C-97C	Boeing	4 R4360-35A P	3,250 hp.	141.2	110.3	38.3	175,000	Over 350	5
C-118A	Douglas	4 R2800-CB-17 P	2,200 hp.	117.5	106.8	28.8	107,000	360	5
C-119G	Fairchild	2 R3350-85 W	3,250 hp.	109.3	86.5	26.2	74,000	250	5
C-121B	Lockheed	4 R3350-75 W	2,500 hp.	123.0	95.3	23.0	100,000	350 top	5
C-123B	Fairchild	2 R2800-99W P	2,500 hp.	110.0	75.7	34.1	50,000	240 top	2
C-124C	Douglas	4 R4360-63 P	3,800 hp.	174.1	130.0	48.3	185,000	Over 300	5
C-130	Lockheed	4 T56-A-1	3,750 hp.	132.7	94.8	38.3	108,000	.....	4
C-131B	Convair	2 R2800-103-W P	2,500 hp.	105.3	79.2	28.1	47,000	Over 300 ³	2
HELICOPTERS									
H-5H	Sikorsky	1 R985-AN5 P	450 hp.	49.0	41.1	13.0	6,500	105 top	2
H-13E	Bell	1 O-335-SA	200 hp.	35.1	31.0	9.5	2,500	100	1
H-19A	Sikorsky	1 R1340-57 P	600 hp.	53.0	42.1 ¹	15.5	7,500	Over 100	2
H-21C	Vertol	1 R1820-103 W	1,425 hp.	44.0	52.5	14.5	15,000	Over 110 ³	2
H-23B	Hiller	1 Franklin 6V4-200-C-33	200 hp.	35.0	38.7	9.8	2,500	84	1
H-25	Vertol	1 Continental R975-42	550 hp.	35.0	31.9	12.5	6,000	Over 100	2

¹ A—Allison; GE—General Electric; P—Pratt & Whitney; W—Wright. ² With afterburner. ³ Knots.

U. S. Peacetime Airplane Production Record

Year	Military	Personal	Transport	Total	Year	Military	Personal	Transport	Total
1946.....	1,669 ²	34,568 ¹	433 ¹	36,670	1952.....	(³)	3,057 ¹	452 ¹	(³)
1947.....	2,100 ²	15,399 ¹	278 ¹	17,717	1953.....	(³)	3,825 ¹	309 ¹	(³)
1948.....	(³)	7,039 ¹	263 ¹	(³)	1954.....	(³)	3,098 ¹	291 ¹	(³)
1949.....	(³)	3,379 ¹	166 ¹	(³)	1955.....	(³)	4,575 ¹	245 ¹	(³)
1950.....	(³)	3,391 ¹	129 ¹	(³)	1956.....	(³)	6,778 ¹	427 ¹	(³)
1951.....	(³)	2,279 ¹	198 ¹	(³)					

Source: Census Bureau. ² Source: Statistical Control Div. of Air Comptroller, Air Force. ³ Not for publication.

ASTRONOMY AND CALENDAR

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Kinds of Time

Of the three main kinds of time (sidereal, apparent solar, and mean solar), the two kinds used in our calendar pages (local civil and standard time) are both types of mean solar time.

Sidereal time is used mostly in astronomy. It is nearly but not exactly star-time, and is measured by the diurnal rotation of the vernal equinox point in the sky. Sidereal days are shorter than solar days by about $3^m 56^s$ of mean time.

Apparent solar time is measured by the apparent diurnal rotation of the sun, and is the hour-angle of the sun $+12^h$. When the sun is at lower transit we have 0^h by apparent time; when it is on the upper meridian the apparent time is 12^h . The sun is not a good timekeeper, its eastward motion along the ecliptic being irregular, so apparent days are of unequal duration.

Mean solar time is the hour-angle of the "mean sun" $+12^h$. The mean sun is an imaginary body moving uniformly along the celestial equator. When the mean sun is on the lower meridian, the mean time is 0^h . The actual sun is sometimes ahead of and sometimes behind the mean sun, and the difference at any moment is the *equation of time*. When the sun is west of the mean sun, we have the "sun fast" situation, and the sun crosses the meridian before the mean sun; when the sun is east of the mean sun, we have the "sun slow" condition, and the sun transits after the mean sun. The equation of time helps in conversion of apparent and mean solar time. No clock runs on apparent time but ordinary clocks keep mean solar time in some form.

Local civil time (L.C.T.) is the mean solar time of a designated meridian, and its day begins with the mean sun at lower transit. This is midnight, the moment of zero hour (0^h). Ordinary clocks are not set to local civil time, because this time—

at any instant—varies with any change of longitude.

Standard time is the local civil time of a standard meridian, but used over an entire time-zone. In the U. S. the four zones (Eastern, Central, Mountain, and Pacific) are based upon the standard meridians of 75° , 90° , 105° , and 120° respectively. Ordinary clocks run on standard time, a type of mean solar time. In the summer, in certain localities, they run on advanced time (as daylight saving time) but this is only a clock-setting, and is actually standard time. Daylight saving time for a certain zone is the normal standard time of one zone to the east. While popular in certain metropolitan areas, it is not used for scientific observations. Advanced time is 1^h later on the clock-face than the normal standard time of the same zone.

Time zones. A time-zone chart of the entire world shows clearly how the world is divided into 24 time zones according to longitude. In a large proportion of countries, standard time is in use, and commonly the time on the clock-face reads 1 hour later for each zone east of a given zone, and 1 hour earlier for each zone west of a given zone. The zero time-zone of the world runs thru Greenwich, Eng., and the zones are so marked that the standard time at a particular station, added algebraically to the zone-number at the bottom gives the corresponding universal time or Greenwich civil time. For example, 3 A.M., M.S.T. $+ 7^h = 10^h$ U.T. or G.C.T.

Mexico, except for the northern part of Lower California, uses 90th-meridian time entirely. Canada uses the 4 standard-time zones of the U. S., and two others: (1) 60th-meridian or Atlantic standard time, for New Brunswick, Nova Scotia, and Quebec (east of 68° w.), 4^h earlier than Greenwich, and (2) 135th-meridian or Yukon standard time, 9^h earlier than Greenwich.

Newfoundland and the Labrador coast use Newfoundland standard time, $3^h 30^m$ earlier than Greenwich. Alaska uses 4 time-zones, those based on the following meridians of west longitude: 120° (Juneau), 135° or Yukon standard time (Yakutat), 150° or Alaska standard time (Fairbanks), and 165° (Nome).

The Date-line. At any moment of time, usually there are parts of two different but contiguous days going on at different places on the earth. The change of date is made at the date-line, an imaginary line that follows essentially the course of the 180° meridian in the Pacific Ocean. At points east of the date-line the calendar day is 1 day earlier than at places to the west of

the line. At a point just west of the date-line, let us suppose it is 13^h or 6 P.M., L.C.T., on Aug. 1. At the same moment it is 12^h at long. 90° e., 6^h at long. 0° , and 0^h at long. 90° w., all of the same date, Aug. 1. West of long. 90° w., it is not yet 0^h (midnight); hence between 90° w. and 180° the date must be July 31. As one crosses the date-line going eastward his watch remains the same but the date changes abruptly to 1 day earlier, so the traveler repeats part of a calendar day. As one crosses the line going westward the date changes abruptly to one day later, causing him to omit a calendar day. (According to actual practice, the change is made at night regardless of the true moment of crossing.)

On Using the Following Calendar Pages

Sun fast and sun slow. This is the equation of time, as previously discussed.

Sunrise and sunset. For accurate results, two corrections to the tabular values are necessary: (1) interpolation for latitude, and (2) reduction to standard time. When the observer is at a latitude between two given latitudes, he computes a time for sunrise or sunset that lies between the times shown for the given latitudes. (Our table of longitudes and latitudes is a guide for one's position, but a large atlas may be consulted.) For example, on Nov. 17, the sun sets at 4:42 P.M. at lat. 40° and at 4:30 at lat. 45° , the difference being -12^m . An observer at New York, N. Y., at lat. $40^\circ 48'$ would be about $\frac{1}{2}$ the distance between 40° and 45° . $\frac{1}{2}(-12^m) = -2^m$ and therefore at his station sunset occurs at 4:42 $- 2^m$ or 4:40 P.M., L.C.T. The station (long. $73^\circ 58'$ w.) is $1^\circ 2'$ or 1° east of the 75° standard meridian. (1) $(-4^m) = -4^m$; 4:40 $- 4^m = 4:36$ P.M., E.S.T. for sunset at New York.

In the sun and moon tables, the data has to be given in LOCAL CIVIL TIME. This is not standard time, but has to be reduced to standard time.

To reduce local civil time to standard time, decrease the L.C.T. by 4^m for every degree the station is east of the standard meridian, or increase the L.C.T. by 4^m for every degree the station is west of the standard meridian.

Moonrise and moonset. For accurate results at any station in the U. S., three corrections are needed: (1) interpolation for latitude, (2) correction for longitudes west of $82\frac{1}{2}^\circ$, and (3) reduction to standard time.

(1) Interpolation for latitude follows the same method as for the sun.

(2) Use of the *a*-factor. The moon tables are exact for the given latitudes and for longitude 75° w. The *a*-factor adapts them to any longitude in the U. S. For observers in the eastern states and as far west

as long. $82\frac{1}{2}^\circ$ [Port Huron, Mich., Mansfield, Ohio, Huntington, W. Va., Asheville, N. C., Tampa, Fla.], no *a*-factor is used. For stations in the 90° zone, between $82\frac{1}{2}^\circ$ and $97\frac{1}{2}^\circ$, use the *a*-factor in the column "90". The "*a*-factor, moonrise" is always to be added to the time of moonrise as derived from the main tables, and the "*a*-factor, moonset" is added to the time of moonset as derived. The boundary at $97\frac{1}{2}^\circ$, between the 90° and the 105° zones, runs through Grafton, N. Dak., Webster, S. Dak., Norfolk, Nebr., Salina, Kans., Oklahoma City, Okla., Fort Worth and Corpus Christi, Tex. Observers in the 105° zone, between $97\frac{1}{2}^\circ$ and $112\frac{1}{2}^\circ$ long., will use the " 105° " *a*-factor, and those west of $112\frac{1}{2}^\circ$ will use the " 120° " *a*-factor, the eastern boundary ($112\frac{1}{2}^\circ$) of the 120° zone going through Butte, Mont., Pocatello, Idaho, Panguitch, Utah, and Prescott, Ariz. These zones do not correspond to the irregular divisions of the standard-time belts.

(3) Change L.C.T. to standard time.

Ex., find moonrise time on March 12 at Dubuque, Iowa, long. $90^\circ 40'$ w., lat. $42^\circ 31'$ n. (a) Moonrise for lat. 40° is 1:03 A.M.; for 45° , 1:17 A.M. The increase is $+14^m$. The station is about $2^\circ 5/5^\circ$ or 0.5 the distance between 40° and 45° . $(0.5)(+14^m) = +7^m$. $1:03 + 7^m = 1:10$ A.M., L.C.T. (b) *a*-factor, moonrise, $= 2^m$, giving 1:12 A.M., L.C.T. (c) Reduce to standard time. $90^\circ 40' - 90^\circ = 0^\circ 40' = 1^\circ$ west of the standard meridian. (1) $(+4^m) = +4^m$; $1:12 + 4^m = 1:16$ A.M., C.S.T., moonrise for Dubuque, Iowa.

Moon's transit. This data indicates the local civil time of the moon crossing the observer's meridian. The time is the same for all latitudes. It is nearly correct for all longitudes in the U. S.; for more exact work use—for every day—a mean *a*-factor of 2^m , 4^m , 6^m . That is, for the 75° zone, use no correction; for the 90° zone add 2^m to the time in the tables; for the 105° zone add 4^m ; for the 120° zone add 6^m . Afterward, reduce the L.C.T. to standard time.

JANUARY 1958

Jan.	LOCAL CIVIL TIME Latitude 30° n.			LOCAL CIVIL TIME Latitude 35° n.			LOCAL CIVIL TIME Latitude 40° n.			LOCAL CIVIL TIME Latitude 45° n.			a-factor, moonrise	
	Sun slow	Sun- rise	Moon- set	Sun- rise	Moon- set	Sun- set	Sun- rise	Moon- set	Sun- set	Moon- rise	Moon- set	Moon's upper transit	90°	105° 120°
1 Wed.	m s	3 22	2 4	5 6 56	5 11	1 51	2 46	h m	h m	h m	h m	h m	m	m
2 Thu.	3 50	2 4	6 56	5 12	2 37	3 42	7 8	4 59	7 22	2 54	3 3	8 39	2	5
3 Fri.	4 18	2 5	7 6 57	5 12	3 29	4 38	7 9	5 0	7 22	3 51	4 2	9 31	2	7
4 Sat.	4 46	3 5	8 6 57	5 13	4 26	5 33	7 9	5 1	7 22	4 46	3 5	10 25	2	7
5 Sun.	5 13	3 6	8 6 57	5 14	5 27	6 28	7 9	5 2	7 22	5 18	6 37	11 22	2	4
6 Mon.	5 39	3 6	9 6 57	5 15	6 31	7 18	7 9	5 3	7 22	6 23	7 27	.....	2	6
7 Tue.	6 6	3 6	9 6 57	5 16	7 36	8 5	7 9	5 4	7 22	7 30	8 12	0 19	2	4
8 Wed.	6 31	3 6	9 6 57	5 16	8 41	9 50	7 9	5 5	7 22	8 38	9 15	1 15	2	3
9 Thu.	6 57	3 6	9 6 57	5 17	9 46	10 52	7 9	5 6	7 22	9 45	10 36	2 10	2	3
10 Fri.	7 22	3 6	9 6 57	5 18	10 50	12 1	7 9	5 7	7 22	10 52	11 11	3 56	1	4
11 Sat.	7 46	3 6	8 6 57	5 19	11 53	10 53	7 9	5 8	7 22	11 58	10 49	4 48	1	3
12 Sun.	8 9	3 6	8 6 57	5 20	.....	11 34	7 9	5 9	7 21	.....	10 46	5 40	2	3
13 Mon.	8 33	3 6	8 6 57	5 20	0 56	12 17	7 8	5 9	7 21	4 56	11 22	5 40	2	3
14 Tue.	8 55	3 5	8 6 57	5 21	1 58	1 3	7 8	5 10	7 20	4 57	12 12	6 33	2	4
15 Wed.	9 17	3 5	7 6 57	5 22	2 58	1 52	7 8	5 11	7 20	4 59	1 30	7 26	2	4
16 Thu.	9 38	2 5	7 6 57	5 23	3 55	2 44	7 8	5 12	7 20	5 0	2 21	8 20	2	4
17 Fri.	9 59	2 4	6 57	5 24	4 50	3 38	7 7	5 13	7 19	5 0	4 18	9 14	2	4
18 Sat.	10 19	2 4	6 56	5 25	5 40	4 34	7 7	5 14	7 19	5 1	5 12	10 8	2	5
19 Sun.	10 38	2 3	5 6 56	5 26	6 25	5 30	7 6	5 15	7 18	5 3	6 44	11 51	2	5
20 Mon.	10 56	1 3	4 6 56	5 27	7 6	6 25	7 6	5 16	7 18	5 4	7 22	12 39	2	5
21 Tue.	11 14	1 3	4 6 56	5 28	7 44	7 20	7 6	5 17	7 17	5 5	7 55	1 1	2	5
22 Wed.	11 31	1 2	4 6 55	5 29	8 19	8 13	7 5	5 18	7 17	5 6	8 26	2 7	2	5
23 Thu.	11 47	1 2	4 6 55	5 29	8 52	9 5	7 5	5 19	7 16	5 8	8 55	3 4	2	5
24 Fri.	12 2	1 2	4 6 54	5 30	9 25	9 57	7 4	5 20	7 15	9 23	10 1	4 16	2	5
25 Sat.	12 17	1 2	4 6 54	5 31	9 57	10 48	7 4	5 21	7 15	5 10	10 57	5 49	2	5
26 Sun.	12 31	1 3	4 6 54	5 32	10 30	11 40	7 3	5 22	7 14	5 11	10 21	6 30	2	5
27 Mon.	12 44	1 3	4 6 53	5 33	11 7	.....	7 3	5 23	7 13	5 12	10 53	7 11	2	5
28 Tue.	12 56	2 3	5 6 53	5 33	11 46	0 33	7 2	5 24	7 13	5 14	11 28	8 11	2	5
29 Wed.	13 7	2 4	5 6 52	5 34	12 28	1 27	7 2	5 25	7 12	5 15	12 7	9 59	2	5
30 Thu.	13 17	2 4	6 6 52	5 35	1 16	2 23	7 1	5 26	7 11	5 16	12 53	11 54	2	5
31 Fri.	13 27	2 5	7 6 51	5 36	2 9	3 18	7 0	5 27	7 10	5 17	1 45	12 58	2	5

FEBRUARY 1958

Feb.	Sun slow	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonset		
		Sun-rise		Moon-rise		Sun-rise		Moon-rise		Sun-rise		Moon-rise		Sun-rise		Moon-rise		Moon's upper transit	90°	
		m	s	m	m	m	m	m	m	m	m	m	m	m	m	m	m		105°	120°
1 Sat.	13 36	6 51	5 37	4 11	4 12	6 59	5 28	4 23	4 35	7 9	5 18	4 26	4 35	7 21	5 7	4 48	10 1	m	m	m
2 Sun.	13 44	6 50	5 37	4 11	4 12	6 59	5 29	4 23	4 35	7 8	5 17	4 25	4 34	7 20	5 6	4 47	10 1	m	m	m
3 Mon.	13 51	6 50	5 38	4 11	4 12	6 58	5 30	4 23	4 34	7 7	5 16	4 24	4 33	7 19	5 5	4 46	10 1	m	m	m
4 Tue.	13 57	6 49	5 39	4 11	4 12	6 57	5 31	4 23	4 33	7 6	5 15	4 23	4 32	7 18	5 4	4 45	10 1	m	m	m
5 Wed.	14 3	6 48	5 40	4 11	4 12	6 56	5 32	4 23	4 32	7 5	5 14	4 22	4 31	7 17	5 3	4 44	10 1	m	m	m
6 Thu.	14 7	6 47	5 41	4 11	4 12	6 55	5 33	4 23	4 31	8 4	5 13	4 21	4 30	7 16	5 2	4 43	10 1	m	m	m
7 Fri.	14 11	6 47	5 42	4 11	4 12	6 55	5 34	4 23	4 30	8 9	5 12	4 20	4 29	7 15	5 1	4 42	10 1	m	m	m
8 Sat.	14 14	6 46	5 43	4 11	4 12	6 54	5 35	4 23	4 29	8 48	5 11	4 19	4 28	7 14	5 0	4 41	10 1	m	m	m
9 Sun.	14 17	6 45	5 44	4 11	4 12	6 53	5 36	4 23	4 27	9 29	5 10	4 17	4 26	7 13	4 59	4 40	10 1	m	m	m
10 Mon.	14 18	6 44	5 45	4 11	4 12	6 52	5 37	4 23	4 26	10 10	5 9	4 16	4 25	7 12	4 58	4 39	10 1	m	m	m
11 Tue.	14 19	6 43	5 46	4 11	4 12	6 51	5 38	4 23	4 25	10 54	5 8	4 15	4 24	7 11	4 57	4 38	10 1	m	m	m
12 Wed.	14 19	6 43	5 46	4 11	4 12	6 50	5 39	4 23	4 24	11 40	5 7	4 14	4 23	7 10	4 56	4 37	10 1	m	m	m
13 Thu.	14 18	6 42	5 47	4 11	4 12	6 49	5 40	4 23	4 23	12 31	5 6	4 13	4 22	7 9	4 55	4 36	10 1	m	m	m
14 Fri.	14 17	6 41	5 48	4 11	4 12	6 48	5 41	4 23	4 22	1 2	5 5	4 12	4 21	7 8	4 54	4 35	10 1	m	m	m
15 Sat.	14 15	6 40	5 49	4 11	4 12	6 47	5 42	4 23	4 21	11 40	5 4	4 11	4 20	7 7	4 53	4 34	10 1	m	m	m
16 Sun.	14 12	6 39	5 50	4 11	4 12	6 46	5 43	4 23	4 20	12 31	5 3	4 10	4 19	7 6	4 52	4 33	10 1	m	m	m
17 Mon.	14 8	6 39	5 50	4 11	4 12	6 44	5 44	4 23	4 19	1 2	5 2	4 9	4 18	7 5	4 51	4 32	10 1	m	m	m
18 Tue.	14 4	6 38	5 51	4 11	4 12	6 43	5 45	4 23	4 18	11 40	5 1	4 8	4 17	7 4	4 50	4 31	10 1	m	m	m
19 Wed.	13 59	6 37	5 52	4 11	4 12	6 42	5 46	4 23	4 17	12 31	5 0	4 7	4 16	7 3	4 49	4 30	10 1	m	m	m
20 Thu.	13 53	6 36	5 53	4 11	4 12	6 41	5 47	4 23	4 16	1 2	4 59	4 15	4 15	7 2	4 48	4 29	10 1	m	m	m
21 Fri.	13 47	6 35	5 53	4 11	4 12	6 40	5 48	4 23	4 15	11 40	4 58	4 14	4 14	7 1	4 47	4 28	10 1	m	m	m
22 Sat.	13 40	6 34	5 54	4 11	4 12	6 39	5 49	4 23	4 14	12 31	4 57	4 13	4 13	7 0	4 46	4 27	10 1	m	m	m
23 Sun.	13 32	6 33	5 54	4 11	4 12	6 37	5 50	4 23	4 13	1 2	4 56	4 12	4 12	6 59	4 45	4 26	10 1	m	m	m
24 Mon.	13 24	6 32	5 55	4 11	4 12	6 36	5 51	4 23	4 12	11 40	4 55	4 11	4 11	6 57	4 44	4 25	10 1	m	m	m
25 Tue.	13 15	6 31	5 56	4 11	4 12	6 35	5 52	4 23	4 11	12 31	4 54	4 10	4 10	6 56	4 43	4 24	10 1	m	m	m
26 Wed.	13 5	6 30	5 57	4 11	4 12	6 34	5 53	4 23	4 10	1 2	4 53	4 9	4 9	6 55	4 42	4 23	10 1	m	m	m
27 Thu.	12 55	6 29	5 57	4 11	4 12	6 32	5 53	4 23	4 9	11 40	4 52	4 8	4 8	6 54	4 41	4 22	10 1	m	m	m
28 Fri.	12 45	6 28	5 58	4 11	4 12	6 31	5 54	4 23	4 8	12 31	4 51	4 7	4 7	6 53	4 40	4 21	10 1	m	m	m

MARCH 1958

Mar.	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonset		Moon's upper transit	
	Sun slow	a-factor, moonrise		Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set					
		90°	105° 120°																	
1 Sat.	m s	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	90°	105° 120°	
2 Sun.	12 34	3	5	8	2 50	6 30	5 55	1 40	3 0	6 34	5 51	1 30	3 11	6 39	5 47	1 17	3 25	8 41	2	
3 Mon.	12 22	3	6	9	3 40	6 29	5 56	2 45	3 49	6 33	5 52	2 36	3 58	6 37	5 48	2 25	4 10	9 37	2	
4 Tue.	12 10	3	6	9	4 28	6 28	5 57	3 52	4 34	6 31	5 53	3 46	4 34	6 35	5 49	3 38	4 51	10 33	2	
5 Wed.	11 57	3	6	9	5 13	6 26	5 58	5 2	5 18	6 30	5 55	4 58	5 23	6 34	5 51	4 54	5 28	11 29	2	
6 Thu.	11 44	3	6	9	5 57	6 25	5 59	6 13	6 0	6 28	5 56	6 12	6 2	6 32	5 52	6 11	6 4	.....	2
7 Fri.	11 30	3	6	9	6 41	6 24	6 0	7 24	6 41	6 27	5 57	7 26	6 40	6 30	5 53	7 29	6 39	0 25	2	
8 Sat.	11 16	3	6	9	7 24	6 23	6 1	8 35	7 22	6 25	5 58	8 40	7 18	6 28	5 54	8 46	7 13	1 20	2	
9 Sun.	11 1	3	6	9	8 10	6 21	6 2	9 44	8 4	6 24	5 59	9 52	7 58	6 26	5 56	10 1	7 50	2 16	2	
10 Mon.	10 46	3	5	8	9 06	6 20	6 2	10 50	8 49	6 22	6 0	11 1	8 40	6 25	5 57	11 12	8 30	3 13	2	
11 Tue.	10 31	3	5	7	9 56	6 18	6 3	11 53	9 36	6 21	6 1	.....	9 26	6 23	5 59	.....	9 14	4 9	2
12 Wed.	10 16	2	5	7	10 37	6 17	6 4	.....	10 27	6 19	6 2	0 5	10 15	6 21	6 0	0 19	10 2	5 5	2
13 Thu.	10 0	2	4	7	11 30	6 16	6 5	0 51	11 20	6 17	6 3	1 3	11 8	6 19	6 1	1 17	10 54	6 0	2	
14 Fri.	9 44	2	4	6	12 25	6 14	6 6	1 44	12 15	6 16	6 4	1 56	12 4	6 17	6 3	2 10	11 50	6 53	2	
15 Sat.	9 27	2	3	5	1 20	6 13	6 6	2 31	1 11	6 14	6 5	2 42	1 1	6 16	6 4	2 54	12 48	7 44	2	
16 Sun.	9 11	2	3	5	2 14	6 11	6 7	3 12	2 7	6 13	6 6	3 22	1 58	6 14	6 6	3 32	1 48	8 33	2	
17 Mon.	8 54	1	3	4	3 44	6 9	6 8	3 50	3 2	6 11	6 7	3 58	2 56	6 12	6 7	4 6	2 48	9 19	2	
18 Tue.	8 37	1	2	4	4 20	6 7	6 9	4 25	3 57	6 9	6 8	4 30	3 53	6 10	6 8	4 37	3 48	10 4	2	
19 Wed.	8 20	1	2	4	4 55	6 6	6 10	4 57	4 51	6 8	6 9	5 0	4 50	6 8	6 9	5 4	4 47	10 47	2	
20 Thu.	8 2	1	2	4	5 28	5 45	6 6	5 28	5 45	6 6	6 11	5 29	5 46	6 6	6 11	5 30	5 46	11 29	2	
21 Fri.	7 44	1	2	3	6 0	6 37	6 4	6 11	5 58	6 5	6 12	5 58	6 42	6 4	6 12	5 56	6 44	12 12	2	
22 Sat.	7 27	1	2	4	6 33	7 29	6 3	6 12	6 30	6 13	6 13	6 26	7 38	6 2	6 13	6 23	7 43	12 54	2	
23 Sun.	7 9	1	3	4	7 7	8 21	6 2	6 13	7 2	6 20	6 1	6 57	8 34	6 0	6 14	6 50	8 41	1 37	2	
24 Mon.	6 51	1	3	4	7 44	9 13	6 0	6 14	7 37	6 0	6 15	7 29	9 30	5 58	6 15	7 20	9 40	2 21	2	
25 Tue.	6 33	2	3	5	8 23	10 6	5 59	6 14	8 14	5 58	6 16	8 5	10 25	5 57	6 17	7 54	10 38	3 8	2	
26 Wed.	6 15	2	4	5	9 5	10 59	5 57	6 15	8 55	5 57	6 18	8 45	11 20	5 55	6 18	8 32	11 33	3 56	2	
27 Thu.	5 56	2	4	6	11 51	11 51	5 56	6 16	9 41	5 55	6 19	9 30	.....	5 53	6 19	9 16	.....	4 46	2
28 Fri.	5 38	2	5	7	10 42	5 55	6 17	10 32	0 1	5 53	6 19	10 20	0 13	5 51	6 20	10 7	0 27	5 37	2
29 Sat.	5 20	3	5	8	11 38	0 41	5 53	6 18	11 28	0 51	5 52	6 20	11 17	1 3	5 49	6 22	11 4	1 17	6 30	2
30 Sun.	5 2	3	5	8	12 37	1 31	5 52	6 18	12 28	1 40	5 50	6 21	12 19	1 50	5 48	6 23	12 7	2 2	7 23	2
31 Mon.	4 43	3	6	8	1 38	2 17	5 50	6 19	1 32	2 25	5 49	6 22	1 24	2 34	5 46	6 25	1 15	2 43	8 17	2
1 Mon.	4 25	3	6	9	2 43	3 2	5 49	6 20	2 38	3 8	5 47	6 23	2 33	3 14	5 44	6 26	2 27	9 12	2	

APRIL 1958

Apr.	Sun slow	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				Moon's upper transit	a-factor, moonset										
		90°		105° 120°		Sun-rise	Moon-rise set	Sun-set	Moon-rise set	Sun-rise	Moon-rise set	Sun-set	Moon-rise set	Sun-rise	Moon-rise set	Sun-set	Moon-rise set												
		m	s	m	s														m	s	m	s	m	s	m	s	m	s	m	s	m	s
1 Tue.	4 7	3	6	9	h m	5 50	6 19	3 49	3 46	h m	5 48	6 21	3 47	3 50	h m	5 45	6 24	3 44	3 53	h m	5 42	6 27	3 42	3 57	10 6	m	m		
2 Wed.	3 49	3	6	9	h m	5 49	6 19	4 56	4 29	5 46	6 22	4 57	4 30	5 44	6 25	5 44	6 25	4 31	4 31	5 40	6 28	4 58	4 32	11 2	2	3	5		
3 Thu.	3 31	3	6	9	h m	5 47	6 20	6 5	5 12	5 45	6 22	6 8	5 11	5 42	6 26	6 12	5 40	6 16	5 6	5 38	6 30	6 16	5 6	11 58	2	3	5		
4 Fri.	3 13	3	6	9	h m	5 46	6 20	7 14	5 58	5 43	6 23	7 20	5 53	5 41	6 27	7 26	5 49	5 36	6 31	7 33	5 43	6 31	7 33	5 43	2	3	5		
5 Sat.	2 56	3	6	9	h m	5 45	6 21	8 22	6 44	5 42	6 24	8 29	6 38	5 39	6 28	8 39	6 30	6 30	6 30	6 32	8 49	6 32	8 49	6 21	0 55	2	4	6	
6 Sun.	2 38	3	5	8	h m	5 44	6 22	9 27	7 34	5 41	6 25	9 36	7 25	5 37	6 29	9 49	7 15	5 32	6 33	10 1	7 5	6 33	10 1	7 5	1 53	2	4	6	
7 Mon.	2 21	2	5	7	h m	5 43	6 22	10 29	8 26	5 39	6 26	10 39	8 16	5 36	6 30	10 52	8 5	5 30	6 34	11 5	7 52	6 34	11 5	7 52	2 52	2	4	7	
8 Tue.	2 4	2	4	6	h m	5 41	6 23	11 26	9 21	5 38	6 26	11 37	9 11	5 34	6 31	11 49	8 59	5 29	6 36	11 5	8 45	6 36	11 5	8 45	3 49	2	5	7	
9 Wed.	1 47	2	4	6	h m	5 40	6 23	10 17	8 27	5 36	6 27	10 7	8 11	5 33	6 32	10 53	9 55	5 27	6 37	0	9 41	4 45	2 5	9 41	4 45	2	5	7	
10 Thu.	1 30	2	4	6	h m	5 39	6 24	0 17	11 14	5 35	6 28	0 26	11 4	5 31	6 33	0 37	10 53	5 25	6 38	0 50	10 41	5 39	2	5	9 41	4 45	2	5	7
11 Fri.	1 14	2	3	5	h m	5 38	6 25	1 3	12 9	5 34	6 29	1 11	12 1	5 29	6 34	1 20	11 52	5 23	6 39	1 32	11 41	6 29	2	5	6 29	2	4	7	
12 Sat.	0 58	1	3	4	h m	5 37	6 25	1 43	1 3	5 33	6 30	1 50	12 57	5 28	6 35	1 58	12 50	5 21	6 41	2 8	12 41	7 17	2	5	7 17	2	5	7	
13 Sun.	0 43	1	3	4	h m	5 36	6 26	2 21	1 57	5 31	6 30	2 26	1 52	5 26	6 36	2 32	1 48	5 20	6 42	2 39	1 41	8 2	2	5	8 2	2	5	7	
14 Mon.	0 27	1	2	4	h m	5 35	6 26	2 56	2 49	5 30	6 31	2 59	2 46	5 25	6 37	3 3	2 44	5 18	6 44	3 8	2 40	8 46	2	5	9 46	2	5	7	
15 Tue.	0 12	1	2	4	h m	5 34	6 27	3 29	3 41	5 29	6 32	3 30	3 40	5 23	6 38	3 32	3 40	5 16	6 45	3 34	3 39	9 28	2	5	10 28	2	5	7	
FAST																													
16 Wed.	0 2	1	2	4	h m	5 33	6 28	4 2	4 33	5 28	6 33	4 1	4 34	5 22	6 39	4 1	4 36	5 14	6 46	3 59	4 38	10 10	2	5	11 10	2	5	7	
17 Thu.	0 16	1	3	4	h m	5 32	6 28	4 35	5 24	5 27	6 34	4 32	5 27	5 20	6 40	4 29	5 32	5 13	6 47	4 26	5 36	10 35	2	5	11 35	2	5	7	
18 Fri.	0 30	1	3	4	h m	5 30	6 29	5 8	6 16	5 25	6 35	5 4	6 21	5 19	6 41	4 59	6 28	5 11	6 49	4 53	6 35	11 35	2	5	12 35	2	5	7	
19 Sat.	0 44	1	3	4	h m	5 29	6 29	5 44	7 9	5 24	6 35	5 38	7 16	5 17	6 42	5 31	7 25	5 10	6 50	5 23	7 34	12 20	2	5	13 20	2	5	7	
20 Sun.	0 57	2	3	5	h m	5 28	6 30	6 23	8 2	5 23	6 36	6 14	8 10	5 16	6 43	6 6	8 20	5 8	6 51	5 55	8 32	1 5	2	5	14 5	2	5	7	
21 Mon.	1 10	2	4	5	h m	5 27	6 31	7 4	8 55	5 22	6 37	6 55	9 5	5 15	6 44	6 45	9 15	5 6	6 52	6 33	9 28	1 53	2	5	15 3	2	5	7	
22 Tue.	1 22	2	4	6	h m	5 26	6 31	7 49	9 37	5 20	6 38	7 40	9 58	5 13	6 45	7 28	10 9	5 5	6 53	7 15	10 23	2 42	2	5	16 23	2	4	7	
23 Wed.	1 34	2	4	7	h m	5 25	6 32	8 39	10 38	5 19	6 38	8 29	10 48	5 12	6 46	8 17	11 0	5 3	6 55	8 3	11 13	3 33	2 42	2	4	17 42	2	4	7
24 Thu.	1 45	2	5	7	h m	5 24	6 32	9 32	11 27	5 17	6 39	9 22	11 36	5 10	6 47	9 11	11 47	5 0	6 56	8 57	0 0	4 25	2	4	18 45	2	4	6	
25 Fri.	1 56	3	5	8	h m	5 23	6 33	10 28	12 1	5 16	6 40	10 19	12 1	5 9	6 48	10 9	12 1	5 0	6 57	9 57	0 0	5 17	2	4	19 57	2	4	6	
26 Sat.	2 6	3	5	8	h m	5 22	6 34	11 28	0 13	5 15	6 41	11 20	0 21	5 8	6 49	11 12	0 31	4 58	6 58	11 1	0 41	6 8	2	3	20 8	2	3	5	
27 Sun.	2 16	3	6	8	h m	5 21	6 34	12 29	0 57	5 14	6 42	12 24	1 4	5 6	6 50	12 17	1 11	4 57	7 0	12 10	1 19	7 1	2	3	21 19	2	3	5	
28 Mon.	2 26	3	6	9	h m	5 20	6 35	1 32	1 40	5 13	6 42	1 29	1 44	5 5	6 51	1 25	1 49	4 55	7 1	1 20	1 55	7 54	2	3	22 54	2	3	5	
29 Tue.	2 35	3	6	9	h m	5 20	6 35	2 37	2 22	5 12	6 43	2 35	2 23	5 3	6 52	2 35	2 25	4 54	7 3	2 34	2 28	8 47	2	3	23 47	2	3	5	
30 Wed.	2 43	3	6	9	h m	5 19	6 36	3 42	3 3	5 11	6 44	3 44	3 2	5 2	6 53	3 46	3 2	4 52	7 4	3 49	2 1	9 41	2	3	24 41	2	3	5	

MAY 1958

May	LOCAL CIVIL TIME Latitude 30° n.			LOCAL CIVIL TIME Latitude 35° n.			LOCAL CIVIL TIME Latitude 40° n.			LOCAL CIVIL TIME Latitude 45° n.			a-factor, moonset		
	Sun fast	Sun- rise	Moon- rise	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Moon's upper transit	90° 105° 120°	
														m	m
1 Thu.	2 51	3 6	9 518	6 37	4 49	3 46	h m	h m	h m	h m	h m	h m	h m	m	m
2 Fri.	2 59	3 6	9 517	6 38	5 47	4 31	5 10	6 45	4 54	3 43	5 1	6 54	4 59	3 39	3 5
3 Sat.	3 6	3 6	9 516	6 38	7 5	5 19	5 9	6 46	6 11	4 25	5 0	6 55	6 12	4 19	4 5
4 Sun.	3 12	3 5	9 515	6 39	8 10	6 10	5 7	6 47	8 20	5 11	4 58	6 56	7 23	5 3	6
5 Mon.	3 18	2 5	9 514	6 40	9 11	7 5	5 6	6 48	9 22	6 1	4 57	6 57	8 32	5 1	7
6 Tue.	3 23	2 4	9 513	6 41	10 6	8 2	5 5	6 49	10 17	7 52	4 55	6 59	10 28	7 40	7
7 Wed.	3 28	2 4	9 512	6 42	10 56	9 1	5 4	6 50	11 5	8 51	4 54	7 0	11 16	8 39	8
8 Thu.	3 32	2 3	9 511	6 42	11 40	9 59	5 3	6 50	11 47	9 50	4 52	7 0	11 56	9 40	8
9 Fri.	3 36	2 3	9 510	6 43	.....	10 54	5 2	6 51	.....	10 48	4 51	7 2	.....	10 40	5
10 Sat.	3 39	1 3	9 510	6 43	0 20	11 49	5 1	6 52	0 25	11 45	4 50	7 3	0 32	11 39	7
11 Sun.	3 41	1 3	9 509	6 44	0 56	12 43	5 0	6 53	1 0	12 40	4 49	7 4	1 4	12 36	5
12 Mon.	3 43	1 2	9 508	6 44	1 30	1 35	4 59	6 54	1 32	1 34	4 48	7 5	1 35	1 33	7
13 Tue.	3 44	1 2	9 507	6 45	2 3	2 27	4 58	6 54	2 3	2 28	4 47	7 6	2 32	2 29	7
14 Wed.	3 45	1 2	9 506	6 45	2 36	3 19	4 58	6 55	2 33	3 1	4 46	7 7	2 32	3 25	7
15 Thu.	3 45	1 3	9 505	6 46	3 9	4 10	4 57	6 56	3 5	4 15	4 45	7 8	3 1	4 21	7
16 Fri.	3 44	1 3	9 504	6 47	3 44	5 3	4 56	6 57	3 38	5 9	4 44	7 9	3 32	5 17	5
17 Sat.	3 43	2 3	9 503	6 47	4 21	5 56	4 55	6 58	4 14	6 4	4 43	7 10	4 44	6 14	7
18 Sun.	3 41	2 3	9 502	6 48	5 2	6 50	4 55	6 58	5 4	6 59	4 43	7 10	4 44	7 10	7
19 Mon.	3 39	2 4	9 501	6 48	5 47	7 43	4 54	6 59	5 37	7 53	4 42	7 11	5 26	8 5	7
20 Tue.	3 36	2 4	9 500	6 49	6 36	8 35	4 53	7 0	6 25	8 45	4 41	7 12	6 14	8 57	6
1 Wed.	3 33	2 5	9 499	6 50	7 27	9 25	4 52	7 1	7 18	9 35	4 40	7 13	7 6	9 46	6
2 Thu.	3 29	3 5	9 498	6 50	8 23	10 12	4 52	7 2	8 14	10 21	4 39	7 14	8 3	10 31	5
3 Fri.	3 24	3 5	9 497	6 51	9 21	10 57	4 51	7 2	9 14	11 4	4 39	7 15	9 4	11 12	5
4 Sat.	3 19	3 5	9 496	6 51	10 22	11 40	4 51	7 3	10 15	11 44	4 38	7 16	10 9	11 56	5
5 Sun.	3 14	3 6	9 495	6 52	11 23	.....	4 50	7 4	11 19	.....	4 37	7 17	11 14	.....	5
6 Mon.	3 8	3 6	9 494	6 53	12 25	0 20	4 50	7 5	12 24	0 23	4 36	7 18	12 21	0 26	4
7 Tue.	3 2	3 6	9 493	6 53	1 28	1 0	4 49	7 5	1 29	1 0	4 36	7 19	1 30	1 1	4
8 Wed.	2 55	3 6	9 492	6 54	2 33	1 41	4 49	7 6	2 36	1 38	4 35	7 19	2 40	1 36	3
9 Thu.	2 48	3 6	9 491	6 54	3 39	2 23	4 48	7 6	3 44	2 19	4 35	7 20	3 51	2 13	5
10 Fri.	2 40	3 6	9 490	6 55	4 45	3 8	4 48	7 7	4 52	3 2	4 34	7 21	5 1	2 54	4
1 Sat.	2 32	3 6	9 489	6 56	5 49	3 57	4 48	7 8	5 59	3 48	4 34	7 22	6 10	3 38	6

JUNE 1958

June	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				Moon's upper transit	a-factor, moonset	
	Sun fast	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set			
	90°	105°	120°		90°	105°	120°		90°	105°	120°		90°	105°	120°		90°	105°	120°
1 Sun.	m s	m	m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	m	m	m
2 Mon.	2 23	3 5	8 5	4 59	6 56	6 52	4 49	4 47	7 8	7 2	4 39	4 33	7 22	7 14	4 28	4 17	7 39	7 29	4 15
3 Tue.	2 5	2 5	7 4	4 59	6 57	7 51	5 45	4 47	7 9	8 2	5 39	4 33	7 23	8 14	5 23	4 16	7 39	8 29	5 9
4 Wed.	1 55	2	4	4 59	6 57	8 45	6 43	4 46	7 9	8 55	6 33	4 32	7 23	9 6	6 22	4 16	7 40	9 19	6 8
5 Thu.	1 45	3	4	4 59	6 58	9 33	7 43	4 46	7 10	9 41	7 33	4 32	7 24	9 51	7 23	4 15	7 41	10 3	7 10
6 Fri.	1 35	3	4	4 59	6 59	10 53	8 42	4 46	7 11	10 22	8 33	4 32	7 25	10 30	8 25	4 15	7 42	10 39	8 14
7 Sat.	1 24	2	4	4 58	6 59	11 29	9 38	4 46	7 11	10 59	9 32	4 32	7 25	11 5	9 25	4 14	7 43	11 11	9 17
8 Sun.	1 13	1	2	4 58	6 59	11 29	10 33	4 46	7 12	11 33	10 29	4 31	7 26	11 36	10 25	4 14	7 43	11 40	10 19
9 Mon.	1 2	2	4	4 58	7 0	12 19	11 27	4 46	7 12	11 24	11 24	4 31	7 26	11 23	11 23	4 13	7 44	11 19	10 19
10 Tue.	0 50	1	2	4 58	7 0	0 36	12 19	4 46	7 13	0 4	12 19	4 31	7 27	0 5	12 20	4 13	7 45	0 6	12 19
11 Wed.	0 38	1	3	4 58	7 1	1 9	1 11	4 46	7 13	0 34	1 13	4 31	7 28	0 34	1 16	4 13	7 46	0 32	1 18
12 Thu.	0 26	1	3	4 58	7 1	1 43	2 3	4 46	7 14	1 6	2 7	4 31	7 28	1 2	2 12	4 13	7 46	0 59	2 17
13 Fri.	0 14	1	3	4 58	7 1	2 19	2 55	4 45	7 14	1 38	3 1	4 30	7 29	1 33	3 8	4 13	7 47	1 26	3 15
14 Sat.	0 1	2	3	4 58	7 2	2 59	3 48	4 45	7 15	2 51	3 55	4 30	7 29	2 5	4 5	4 13	7 47	1 57	4 14
15 Sun.	SLOW	2	4	4 58	7 2	3 42	4 42	4 45	7 15	3 33	4 50	4 30	7 30	2 41	5 1	4 13	7 48	2 31	5 13
16 Mon.	0 25	2	4	4 58	7 2	4 30	5 36	4 45	7 15	3 33	5 45	4 30	7 30	3 22	5 57	4 13	7 48	3 8	6 10
17 Tue.	0 38	2	4	4 58	7 2	4 30	6 29	4 45	7 16	4 19	6 39	4 30	7 31	4 7	6 51	4 13	7 49	3 53	7 5
18 Wed.	0 51	3	5	4 59	7 3	5 21	7 29	4 46	7 16	5 10	7 30	4 31	7 31	4 59	7 42	4 13	7 49	4 45	7 56
19 Thu.	1 4	3	5	4 59	7 3	6 16	8 10	4 46	7 17	6 8	8 19	4 31	7 32	5 55	8 29	4 13	7 50	5 42	8 42
20 Fri.	1 17	3	6	4 59	7 3	7 15	8 56	4 46	7 17	7 6	9 4	4 31	7 32	6 56	9 12	4 13	7 50	6 45	9 23
21 Sat.	1 30	3	6	4 59	7 3	8 16	9 40	4 46	7 17	8 8	9 45	4 31	7 32	8 1	9 52	4 13	7 50	7 51	9 59
22 Sun.	1 43	3	6	4 59	7 4	9 17	10 21	4 46	7 17	9 12	10 25	4 31	7 32	9 7	10 29	4 13	7 50	9 0	10 34
23 Mon.	1 56	3	6	5 0	7 4	10 19	11 1	4 47	7 18	10 16	11 3	4 32	7 33	10 13	11 4	4 14	7 51	10 10	11 5
24 Tue.	2 9	3	6	5 0	7 5	11 21	11 41	4 47	7 18	11 21	11 40	4 32	7 33	11 21	11 38	4 14	7 51	11 21	11 37
25 Wed.	2 22	3	6	5 0	7 5	12 24	.....	4 47	7 18	12 27	.....	4 32	7 33	12 29	.....	4 14	7 51	12 32	.....
26 Thu.	2 35	3	6	5 0	7 5	1 27	0 22	4 47	7 18	1 33	0 18	4 32	7 33	1 37	0 15	4 14	7 51	1 44	0 10
27 Fri.	2 47	3	6	5 0	7 5	2 31	1 4	4 48	7 18	2 39	0 59	4 33	7 33	2 46	0 52	4 15	7 51	2 56	0 45
28 Sat.	3 0	3	5	5 1	7 5	3 35	1 50	4 48	7 18	3 44	1 43	4 33	7 33	3 55	1 33	4 15	7 51	4 6	1 23
29 Sun.	3 12	2	5	5 1	7 5	4 38	2 39	4 49	7 18	4 48	2 30	4 34	7 33	5 0	2 19	4 16	7 51	5 13	2 7
30 Mon.	3 24	2	4	5 1	7 5	5 35	3 33	4 49	7 18	5 48	3 23	4 34	7 33	6 0	3 11	4 16	7 51	6 14	2 57
						6 33	4 29	4 49	7 18	6 43	4 19	4 34	7 33	6 55	4 7	4 16	7 51	7 8	3 52
																			11 54
																			2
																			5
																			5
																			7

JULY 1958

July	Sun slow	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				Moon's upper transit	a-factor, moonset		
		Sun rise		Sun set	Moon rise	Moon set	Sun rise	Sun set	Moon rise	Moon set	Sun rise	Sun set	Moon rise	Moon set	Sun rise	Sun set	Moon rise		Moon set		
		m	s																	m	m
1 Tue.	3 35	2 4	5 5	7 24	5 27	4 50	7 18	7 32	5 17	4 35	7 33	7 43	5 7	4 17	7 51	7 56	4 53	0 48	3	5	8
2 Wed.	3 47	2 4	5 5	7 5	8 9	6 26	4 50	7 18	8 16	6 18	4 35	7 32	8 25	6 8	4 17	7 50	8 35	5 56	0 48	3	5
3 Thu.	3 58	1 3	4 5	7 5	8 50	7 25	4 51	7 18	8 55	7 18	4 36	7 32	9 2	7 10	4 18	7 50	9 10	7 0	1 40	3	5
4 Fri.	4 9	1 3	4 5	7 5	9 27	8 21	4 51	7 18	9 31	8 13	4 36	7 32	9 35	8 10	4 18	7 50	9 41	8 4	2 28	3	5
5 Sat.	4 20	1 2	4 5	7 5	10 2	9 16	4 51	7 18	10 4	9 13	4 37	7 32	10 6	9 10	4 19	7 50	10 9	9 6	3 15	2	5
6 Sun.	4 30	1 2	4 5	7 5	10 36	10 10	4 52	7 18	10 35	10 8	4 37	7 32	10 35	10 8	4 20	7 49	10 35	10 6	3 59	2	5
7 Mon.	4 40	1 2	4 5	7 4	11 9	11 2	4 52	7 17	11 6	11 3	4 38	7 31	11 4	11 5	4 20	7 49	11 2	11 6	4 42	2	5
8 Tue.	4 50	1 3	4 5	7 4	11 42	11 54	4 53	7 17	11 38	11 57	4 38	7 31	11 33	12 1	4 21	7 48	11 29	12 5	5 24	2	5
9 Wed.	4 59	1 3	4 5	7 4	12 46	12 46	4 53	7 17	12 51	12 51	4 39	7 31	12 57	12 57	4 22	7 48	11 57	1 3	6 7	2	5
10 Thu.	5 8	1 3	4 5	7 4	0 18	1 38	4 54	7 17	0 11	1 45	4 40	7 31	0 5	1 53	4 23	7 47	12 57	2 2	6 51	2	5
11 Fri.	5 17	2 3	5 7	7 4	0 55	2 31	4 54	7 16	0 48	2 39	4 40	7 30	0 39	2 50	4 24	7 47	0 29	3 0	7 36	2	5
12 Sat.	5 25	2 3	5 7	7 3	1 36	3 25	4 55	7 16	1 27	3 34	4 41	7 30	1 18	3 45	4 24	7 46	1 4	3 59	8 24	2	5
13 Sun.	5 33	2 4	6 5	7 3	2 21	4 19	4 55	7 15	2 11	4 29	4 41	7 29	2 0	4 40	4 25	7 46	1 46	4 54	9 14	2	5
14 Mon.	5 40	2 5	7 5	7 3	3 11	5 12	4 56	7 15	3 1	5 22	4 42	7 29	2 49	5 33	4 26	7 45	2 35	5 47	10 6	2	4
15 Tue.	5 47	2 5	7 5	7 3	4 5	6 2	4 57	7 15	3 55	6 12	4 43	7 29	3 44	6 23	4 27	7 44	3 30	6 35	10 59	2	4
16 Wed.	5 53	3 5	8 5	7 2	5 4	6 51	4 57	7 14	4 54	6 59	4 44	7 28	4 44	7 9	4 28	7 43	4 32	7 20	11 53	2	4
17 Thu.	5 59	3 6	8 5	7 2	6 5	7 37	4 58	7 14	5 57	7 44	4 44	7 27	5 48	7 51	4 29	7 43	5 38	7 59	12 47	2	3
18 Fri.	6 4	3 6	9 5	7 1	7 7	8 20	4 58	7 13	7 2	8 24	4 45	7 27	6 55	8 30	4 30	7 42	6 47	8 35	1 41	2	3
19 Sat.	6 9	3 6	9 5	7 1	8 10	9 2	4 59	7 13	8 7	9 4	4 46	7 26	8 3	9 6	4 31	7 41	7 59	9 23	1 41	3	4
20 Sun.	6 13	3 6	9 5	7 1	9 14	9 42	5 0	7 12	9 13	9 42	4 47	7 25	9 11	9 41	4 32	7 40	9 11	9 42	3 26	2	3
21 Mon.	6 16	3 6	9 5	7 0	10 17	10 33	5 1	7 11	10 19	10 20	4 48	7 24	10 20	10 17	4 33	7 39	10 23	10 14	4 17	2	3
22 Tue.	6 19	3 6	9 5	7 0	11 21	11 5	5 2	7 11	11 25	11 0	4 49	7 24	11 29	10 54	4 34	7 38	11 35	10 47	5 10	2	3
23 Wed.	6 22	3 6	8 5	6 59	12 24	11 49	5 3	7 10	12 31	11 42	4 50	7 23	12 38	11 34	4 35	7 37	12 46	11 25	6 3	2	4
24 Thu.	6 24	3 6	8 5	6 59	1 28	1 28	5 3	7 9	1 35	1 45	4 51	7 22	1 45	1 45	4 36	7 36	1 56	1 56	6 58	2	4
25 Fri.	6 25	3 5	8 5	6 58	2 29	0 36	5 4	7 8	2 39	0 27	4 52	7 21	2 50	0 18	4 37	7 35	3 3	0 6	7 53	2	4
26 Sat.	6 26	2 5	7 5	6 58	3 29	1 27	5 5	7 8	3 39	1 17	4 53	7 20	3 51	1 6	4 38	7 34	4 6	0 53	8 49	2	4
27 Sun.	6 26	2 4	6 5	6 57	4 25	2 21	5 5	7 7	4 35	2 11	4 53	7 19	4 47	1 59	4 39	7 33	5 2	1 45	9 45	2	4
28 Mon.	6 25	2 4	6 5	6 57	5 16	3 17	5 6	7 7	5 26	3 7	4 54	7 18	5 37	2 55	4 40	7 32	5 50	2 42	10 39	3	5
29 Tue.	6 24	2 3	5 5	6 56	6 3	4 15	5 7	7 6	6 12	4 6	4 55	7 17	6 21	3 56	4 41	7 31	6 32	3 43	11 31	3	5
30 Wed.	6 22	1 3	4 5	6 55	6 45	5 13	5 8	7 5	6 53	5 5	4 56	7 16	7 0	4 57	4 42	7 30	7 9	4 46	11 31	3	5
31 Thu.	6 19	1 3	4 5	6 54	7 25	6 10	5 8	7 4	7 29	6 4	4 57	7 15	7 35	5 57	4 43	7 29	7 41	5 49	0 21	3	5

AUGUST 1958

Aug.	Sun slow	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonset		
		Sun		Moon		Sun		Moon		Sun		Moon		Sun		Moon		Moon's upper transit	90° 105° 120°	
		rise	set	rise	set	rise	set	rise	set	rise	set	rise	set	rise	set	rise	set		m	m
1 Fri.	6 16	5 19	6 54	8 1	7 5	5 9	7 3	8 4	7 2	4 57	7 14	8 6	6 57	4 45	7 27	8 11	6 52	h m	m	m
2 Sat.	6 13	5 19	6 53	8 35	8 0	5 9	7 3	8 36	7 58	4 58	7 13	8 37	7 56	4 46	7 26	8 38	7 53	h m	2	5
3 Sun.	6 9	5 20	6 52	9 8	8 53	5 10	7 1	9 7	8 53	4 59	7 12	9 6	8 54	4 47	7 25	9 4	8 53	h m	2	5
4 Mon.	6 4	5 21	6 51	9 42	9 45	5 11	7 0	9 39	9 47	5 0	7 11	9 35	9 46	4 48	7 24	9 31	9 53	h m	2	5
5 Tue.	5 58	5 21	6 50	10 16	10 37	5 12	6 59	10 11	10 41	5 1	7 10	10 6	10 50	4 49	7 22	9 59	10 51	h m	2	5
6 Wed.	5 52	5 22	6 50	10 53	11 29	5 12	6 59	10 46	11 35	5 2	7 8	10 38	11 42	4 51	7 21	10 30	11 50	h m	2	5
7 Thu.	5 46	5 22	6 49	11 32	12 21	5 13	6 58	11 23	12 29	5 3	7 7	11 14	12 38	4 52	7 19	11 3	12 48	h m	2	5
8 Fri.	5 39	5 22	6 48	.....	1 14	5 14	6 57	0 5	1 23	5 3	7 5	11 54	1 33	4 53	7 18	11 41	1 45	h m	2	5
9 Sat.	5 31	5 24	6 47	0 15	2 7	5 15	6 56	0 5	2 17	5 4	7 5	.....	2 28	4 54	7 16	.....	2 41	h m	2	5
10 Sun.	5 23	5 24	6 46	1 1	3 0	5 16	6 55	0 51	3 10	5 6	7 4	0 39	3 21	4 55	7 15	0 25	3 35	h m	2	4
11 Mon.	5 14	5 25	6 45	1 52	3 51	5 16	6 53	1 42	4 1	5 7	7 2	1 31	4 12	4 57	7 13	1 17	4 25	h m	2	4
12 Tue.	5 4	5 25	6 45	2 48	4 41	5 17	6 52	2 39	4 50	5 8	7 1	2 28	4 59	4 58	7 12	2 15	5 12	h m	2	4
13 Wed.	4 54	5 26	6 44	3 48	5 28	5 18	6 51	3 40	5 35	5 9	7 0	3 31	5 44	4 59	7 10	3 19	5 54	h m	2	4
14 Thu.	4 44	5 27	6 43	4 51	6 13	5 19	6 50	4 44	6 19	5 10	6 59	4 36	6 25	5 0	7 8	4 28	6 32	h m	2	3
15 Fri.	4 33	5 27	6 42	5 56	6 57	5 20	6 49	5 51	7 0	5 11	6 57	5 46	7 4	5 1	7 7	5 39	7 8	h m	2	3
16 Sat.	4 21	5 28	6 41	7 1	7 39	5 21	6 48	6 58	7 40	5 12	6 56	6 56	7 41	5 2	7 5	6 53	7 42	h m	2	3
17 Sun.	4 9	5 28	6 40	8 6	8 21	5 21	6 47	8 6	8 19	5 13	6 54	8 7	8 18	5 3	7 4	8 8	8 15	h m	2	3
18 Mon.	3 56	5 29	6 39	9 12	9 4	5 22	6 46	9 14	9 0	5 14	6 53	9 18	8 55	5 4	7 2	9 22	8 49	h m	2	3
19 Tue.	3 43	5 30	6 38	10 17	9 49	5 23	6 45	10 22	9 42	5 15	6 52	10 28	9 35	5 5	7 0	10 35	9 26	h m	2	3
20 Wed.	3 30	5 30	6 37	11 21	10 35	5 24	6 43	11 28	10 27	5 16	6 50	11 37	10 18	5 6	6 59	11 46	10 7	h m	2	4
21 Thu.	3 15	5 31	6 35	12 24	11 25	5 24	6 42	12 32	11 16	5 17	6 49	12 43	11 4	5 8	6 57	12 55	10 52	h m	2	4
22 Fri.	3 1	5 31	6 34	1 24	.....	5 25	6 40	1 33	.....	5 18	6 47	1 45	11 55	5 9	6 56	1 59	11 42	h m	2	4
23 Sat.	2 46	5 32	6 33	2 20	0 17	5 26	6 39	2 30	0 7	5 19	6 46	2 42	.....	5 10	6 54	2 57	.....	h m	2	5
24 Sun.	2 30	5 32	6 32	3 12	1 13	5 27	6 38	3 22	1 2	5 20	6 45	3 33	0 51	5 11	6 52	3 46	0 37	h m	2	5
25 Mon.	2 14	5 33	6 31	4 0	2 9	5 27	6 37	4 9	1 59	5 21	6 43	4 19	1 48	5 12	6 50	4 30	1 36	h m	2	5
26 Tue.	1 58	5 33	6 30	4 43	3 6	5 28	6 35	4 50	2 57	5 21	6 42	4 59	2 47	5 14	6 49	5 8	2 37	h m	3	5
27 Wed.	1 41	5 34	6 29	5 23	4 2	5 28	6 34	5 28	3 55	5 22	6 40	5 35	3 47	5 15	6 47	5 42	3 39	h m	3	5
28 Thu.	1 23	5 34	6 28	6 0	4 57	5 29	6 33	6 4	4 53	5 23	6 39	6 7	4 47	5 16	6 45	6 12	4 41	h m	3	5
29 Fri.	1 6	5 35	6 27	6 35	5 52	5 30	6 32	6 37	5 49	5 24	6 37	6 38	5 46	5 17	6 43	6 41	5 42	h m	2	5
30 Sat.	0 48	5 35	6 26	7 9	6 45	5 31	6 30	7 8	6 44	5 25	6 36	7 8	6 44	5 18	6 41	7 7	6 42	h m	2	5
31 Sun.	0 29	5 36	6 24	7 42	7 38	5 31	6 29	7 40	7 39	5 26	6 34	7 37	7 41	5 20	6 40	7 34	7 42	h m	2	5

SEPTEMBER 1958

Sept.	Sun slow	a-factor, moonrise		LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonset	
		90°		105° 120°		Sun-rise	Sun-set	Moon-rise	Moon-set	Sun-rise	Sun-set	Moon-rise	Moon-set	Sun-rise	Sun-set	Moon-rise	Moon-set	Moon's upper transit	90°	105° 120°	
		m	s	m	m																m
1 Mon.	0 11 FAST	1	3	4	5 36	6 23	8 16	8 30	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	m
2 Tue.	0 8	1	3	4	5 37	6 22	8 52	9 22	5 33	6 26	8 45	9 26	9 33	5 22	6 36	8 31	9 39	2 42	5	7	
3 Wed.	0 27	2	3	5	5 38	6 21	9 29	10 13	5 34	6 25	9 22	10 20	10 28	5 29	6 34	9	10 37	3 26	5	7	
4 Thu.	0 47	2	4	5	5 38	6 20	10 10	11 5	5 35	6 23	10 11	11 14	11 23	5 30	6 32	9 39	11 35	4 10	5	7	
5 Fri.	1 7	2	4	6	5 39	6 18	10 54	11 57	5 35	6 22	10 44	12 7	12 17	5 31	6 31	10 20	12 30	4 57	5	7	
6 Sat.	1 27	2	4	7	5 39	6 17	11 43	12 49	5 36	6 20	11 32	12 59	1 11	5 32	6 29	11 7	1 24	5 45	2	4	
7 Sun.	1 47	2	5	7	5 40	6 16	11 39	13 5	5 37	6 19	11 27	1 49	2 1	5 28	6 27	11 27	2 14	6 36	2	4	
8 Mon.	2 7	2	5	7	5 41	6 15	11 35	13 10	5 38	6 18	11 23	1 50	2 14	5 29	6 25	0 3	3 1	7 27	2	4	
9 Tue.	2 28	3	5	8	5 41	6 14	11 31	13 17	5 38	6 16	11 19	1 51	2 15	5 30	6 23	1 0	3 45	8 20	2	4	
10 Wed.	2 48	3	6	8	5 42	6 12	11 27	13 22	5 39	6 15	11 10	1 52	2 16	5 32	6 22	2 5	4 25	9 14	2	3	
11 Thu.	3 9	3	6	9	5 42	6 11	11 20	13 27	5 39	6 13	11 01	1 53	2 17	5 33	6 20	3 15	5 1	10 8	2	3	
12 Fri.	3 30	3	6	9	5 43	6 10	11 13	13 32	5 40	6 12	10 53	1 54	2 18	5 34	6 18	4 29	5 37	11 2	2	3	
13 Sat.	3 51	3	6	9	5 43	6 9	11 05	13 37	5 41	6 11	10 45	1 55	2 19	5 35	6 16	5 44	6 11	11 57	2	3	
14 Sun.	4 12	3	6	9	5 44	6 8	10 57	13 42	5 42	6 9	10 37	1 56	2 20	5 36	6 14	7 0	6 47	12 52	2	3	
15 Mon.	4 33	3	6	9	5 44	6 8	10 48	13 47	5 42	6 8	10 28	1 57	2 21	5 38	6 12	8 16	7 24	1 48	2	4	
16 Tue.	4 54	3	6	9	5 45	6 5	10 39	13 52	5 43	6 6	10 19	1 58	2 22	5 39	6 10	9 30	8 4	2 45	2	4	
17 Wed.	5 16	3	6	8	5 45	6 4	10 30	14 0	5 43	6 5	10 10	2 0	2 23	5 40	6 8	10 43	8 49	3 42	2	4	
18 Thu.	5 37	3	6	8	5 46	6 3	10 21	14 5	5 45	6 4	10 01	2 0	2 24	5 41	6 6	11 51	9 39	4 39	2	5	
19 Fri.	5 58	2	5	7	5 46	6 1	12 15	11 8	5 45	6 2	12 06	10 58	5 44	6 3	6 12	12 51	10 33	5 36	2	5	
20 Sat.	6 20	2	4	6	5 47	6 0	1 9	12 11	5 46	6 1	11 57	10 53	5 43	6 4	6 3	14 41	11 30	6 31	2	5	
21 Sun.	6 41	2	4	5	5 47	5 58	1 58	0 5	5 46	5 59	2 7	10 48	5 42	6 5	6 1	12 30	11 44	6 31	2	5	
22 Mon.	7 2	2	3	5	5 48	5 57	2 43	1 1	5 47	5 58	2 50	10 43	5 41	6 6	6 1	12 21	11 30	6 22	3	5	
23 Tue.	7 23	1	3	4	5 49	5 56	3 23	1 57	5 48	5 56	3 29	10 38	5 40	6 7	6 1	12 12	11 21	6 13	3	5	
24 Wed.	7 44	1	3	4	5 49	5 55	4 0	2 52	5 49	5 55	4 5	10 33	5 39	6 8	6 1	12 03	11 12	6 04	2	5	
25 Thu.	8 5	1	3	4	5 50	5 53	4 35	3 46	5 49	5 53	4 38	10 28	5 38	6 9	6 1	12 04	11 03	6 05	2	5	
26 Fri.	8 26	1	2	4	5 50	5 52	5 9	4 40	5 50	5 52	5 10	10 23	5 37	6 10	6 1	11 54	10 54	6 06	2	5	
27 Sat.	8 46	1	3	4	5 51	5 51	5 43	5 32	5 51	5 50	5 41	10 18	5 36	6 11	6 1	11 45	10 45	6 07	2	5	
28 Sun.	9 7	1	3	4	5 52	5 50	6 16	6 24	5 52	5 49	6 13	10 13	5 35	6 12	6 1	11 36	10 36	6 08	2	5	
29 Mon.	9 27	1	3	4	5 52	5 49	6 51	7 16	5 53	5 47	6 46	10 8	5 34	6 13	6 1	11 27	10 26	6 09	2	5	
30 Tue.	9 47	2	3	5	5 53	5 47	7 28	8 8	5 53	5 46	7 22	10 3	5 33	6 14	6 1	11 18	10 17	6 10	2	5	

OCTOBER 1958

Oct.	Sun fast	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonset		
		a-factor, moonrise		Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Sun- rise	Moon- rise	Moon- set	Moon's upper transit				
		90°	105°														120°			
1 Wed.	m 10 6	m 2 3	5 53	5 46	h 8 8	9 0	h 5 54	5 44	h 8 0	9 7	h 5 56	5 44	h 7 50	9 16	h 5 58	5 42	h 7 39	9 27	m 2 4	m 7 4
2 Thu.	m 10 26	2 4	5 54	5 45	h 8 50	9 51	5 55	5 43	h 8 41	10 0	5 57	5 42	h 8 30	10 10	5 59	5 40	h 8 18	10 22	2 53	2 4
3 Fri.	m 10 45	2 4	5 54	5 44	h 9 36	10 42	5 56	5 42	h 9 26	10 52	5 58	5 40	h 9 15	11 3	6 0	5 38	9 2	11 16	3 40	2 4
4 Sat.	m 11 3	2 4	5 55	5 43	h 10 26	11 32	5 57	5 40	h 10 16	11 42	5 59	5 39	h 10 5	11 54	6 1	5 36	9 51	12 7	4 29	2 4
5 Sun.	m 11 22	2 5	5 55	5 41	h 11 20	12 21	5 57	5 39	h 11 10	12 31	6 0	5 37	h 11 0	12 42	6 3	5 34	10 47	12 54	5 19	2 4
6 Mon.	m 11 40	3 5	5 56	5 40	.....	1 8	5 58	5 37	.....	1 16	6 1	5 36	h 11 59	1 27	6 4	5 32	11 48	1 38	6 10	2 3
7 Tue.	m 11 57	3 5	5 56	5 39	0 16	1 53	5 59	5 36	0 8	2 1	6 2	5 34	.....	2 8	6 5	5 30	.....	2 18	7 1	2 3
8 Wed.	m 12 15	3 5	5 57	5 38	1 16	2 37	6 0	5 35	1 9	2 43	6 3	5 32	1 3	2 48	6 6	5 28	0 53	2 55	7 53	2 3
9 Thu.	m 12 31	3 6	5 58	5 37	2 18	3 20	6 1	5 34	2 14	3 23	6 4	5 31	2 9	3 27	6 7	5 26	2 3	3 30	8 46	2 3
10 Fri.	m 12 48	3 6	5 58	5 35	3 23	4 2	6 1	5 32	3 21	4 3	6 5	5 29	3 19	4 4	6 9	5 25	3 16	4 5	9 40	2 3
11 Sat.	m 13 3	3 6	5 59	5 34	4 29	4 45	6 2	5 31	4 30	4 44	6 6	5 28	4 30	4 42	6 10	5 23	4 31	4 39	10 34	2 3
12 Sun.	m 13 19	3 6	6 0	5 33	5 37	5 31	6 3	5 30	5 40	5 26	6 7	5 26	5 43	5 22	6 11	5 21	5 47	5 16	11 30	2 3
13 Mon.	m 13 34	3 6	6 1	5 32	6 45	6 18	6 4	5 29	6 51	6 12	6 8	5 24	6 57	6 5	6 12	5 19	7 5	5 56	12 28	2 4
14 Tue.	m 13 48	3 6	6 1	5 31	7 54	7 9	6 5	5 27	8 1	7 1	6 9	5 23	8 11	6 51	6 14	5 18	8 20	6 40	1 27	2 4
15 Wed.	m 14 2	3 6	6 2	5 30	9 0	8 3	6 5	5 26	9 10	7 53	6 10	5 21	9 20	7 42	6 15	5 16	9 32	7 29	2 26	2 4
16 Thu.	m 14 15	2 5	6 2	5 29	10 3	8 59	6 6	5 24	10 13	8 49	6 11	5 20	10 25	8 37	6 17	5 15	10 38	8 23	3 25	2 5
17 Fri.	m 14 28	2 4	6 3	5 28	11 1	9 55	6 7	5 23	11 11	9 46	6 12	5 18	11 23	9 35	6 18	5 13	11 37	9 22	4 23	3 5
18 Sat.	m 14 40	2 4	6 4	5 27	11 54	10 55	6 8	5 22	12 3	10 45	6 13	5 17	12 14	10 35	6 19	5 11	12 26	10 23	5 18	3 5
19 Sun.	m 14 51	2 3	6 4	5 26	12 41	11 52	6 9	5 21	12 49	11 44	6 14	5 15	12 58	11 35	6 20	5 9	1 9	11 26	6 10	3 5
20 Mon.	m 15 2	1 3	6 4	5 25	1 23	.....	6 9	5 19	1 30	.....	6 15	5 14	1 37	.....	6 22	5 8	1 46	.....	6 59	3 5
21 Tue.	m 15 13	1 3	6 5	5 24	2 1	0 47	6 10	5 18	2 6	0 42	6 16	5 12	2 12	0 35	6 23	5 6	2 18	0 28	7 45	2 5
22 Wed.	m 15 22	1 2	6 6	5 23	2 37	1 42	6 11	5 17	2 40	1 38	6 17	5 11	2 43	1 34	6 24	5 4	2 47	1 28	8 29	2 5
23 Thu.	m 15 31	1 2	6 7	5 22	3 1	2 35	6 12	5 16	3 12	2 33	6 18	5 10	3 13	2 31	6 25	5 2	3 14	2 28	9 13	2 5
24 Fri.	m 15 40	1 2	6 8	5 21	3 44	3 28	6 13	5 15	3 43	3 27	6 19	5 9	3 42	3 28	6 27	5 1	3 41	3 27	9 55	2 5
25 Sat.	m 15 47	1 3	6 8	5 20	4 18	4 20	6 14	5 14	4 17	4 21	6 21	5 7	4 11	4 24	6 28	4 59	4 8	4 26	10 38	2 5
26 Sun.	m 15 54	1 3	6 9	5 19	4 52	5 11	6 15	5 13	4 47	5 15	6 22	5 6	4 43	5 20	6 30	4 58	4 36	5 25	11 21	2 5
27 Mon.	m 16 1	1 3	6 10	5 18	5 29	6 3	6 16	5 12	5 22	6 9	6 23	5 5	4 50	5 15	6 31	4 56	5 6	6 23	.....	2 5
28 Tue.	m 16 6	2 3	6 11	5 17	6 6	6 55	6 17	5 11	5 59	7 2	6 24	5 4	5 50	7 10	6 32	4 55	5 40	7 21	0 5	2 5
29 Wed.	m 16 11	2 3	6 11	5 16	6 49	7 47	6 18	5 10	6 40	7 56	6 25	5 2	6 30	8 5	6 34	4 53	6 18	8 17	0 51	2 4
30 Thu.	m 16 15	2 4	6 12	5 15	7 34	8 38	6 18	5 8	7 24	8 48	6 26	5 1	7 13	8 59	6 35	4 52	7 0	9 12	1 37	2 4
31 Fri.	m 16 18	2 4	6 12	5 14	8 22	9 28	6 19	5 7	8 12	9 39	6 27	4 59	8 1	9 50	6 37	4 50	7 47	10 3	2 26	2 4

NOVEMBER 1958

Nov.	Sun fast	LOCAL CIVIL TIME Latitude 30° n.				LOCAL CIVIL TIME Latitude 35° n.				LOCAL CIVIL TIME Latitude 40° n.				LOCAL CIVIL TIME Latitude 45° n.				a-factor, moonrise		
		Sun-rise	Sun-set	Moon-rise	Moon-set	Sun-rise	Sun-set	Moon-rise	Moon-set	Sun-rise	Sun-set	Moon-rise	Moon-set	Sun-rise	Sun-set	Moon-rise	Moon-set	Moon's upper transit	90°	
																			105°	120°
1 Sat.	m 16 21	6 13	5 13	9 13	10 18	6 20	5 6	9 3	10 28	6 28	4 58	8 53	10 39	6 38	4 49	8 40	10 51	h m	m	m
2 Sun.	m 16 22	6 14	5 12	10 8	11 4	6 21	5 5	9 59	11 13	6 29	4 58	9 49	11 24	6 39	4 48	9 38	11 36	h m	m	m
3 Mon.	m 16 23	6 15	5 12	11 5	11 49	6 22	5 4	10 58	11 57	6 30	4 56	10 49	12 6	6 41	4 46	10 40	12 16	h m	m	m
4 Tue.	m 16 23	6 15	5 11	12 32	12 32	6 23	5 4	11 59	12 38	6 32	4 55	11 53	12 45	6 42	4 45	11 45	12 53	h m	m	m
5 Wed.	m 16 22	6 16	5 11	0 4	1 14	6 24	5 3	1 17	1 17	6 33	4 54	1 22	1 22	6 44	4 43	1 28	1 28	h m	m	m
6 Thu.	m 16 21	6 17	5 10	1 5	1 55	6 25	5 2	1 2	1 56	6 34	4 53	0 58	1 58	6 45	4 42	0 54	2 1	h m	m	m
7 Fri.	m 16 18	6 18	5 9	2 8	2 36	6 26	5 1	2 8	2 35	6 35	4 52	2 7	2 35	6 46	4 41	2 5	2 34	h m	m	m
8 Sat.	m 16 15	6 19	5 8	3 13	3 18	6 27	5 0	3 15	3 16	6 36	4 51	3 17	3 12	6 47	4 40	3 20	3 8	h m	m	m
9 Sun.	m 16 10	6 19	5 8	4 20	4 4	6 28	5 0	4 25	3 59	6 38	4 50	4 29	3 52	6 49	4 38	4 35	3 45	h m	m	m
10 Mon.	m 16 5	6 20	5 7	5 28	4 53	6 29	4 59	5 35	4 45	6 39	4 48	5 42	4 37	6 50	4 37	5 51	4 27	h m	m	m
11 Tue.	m 15 59	6 21	5 6	6 37	5 46	6 30	4 58	6 45	5 36	6 40	4 48	6 55	5 26	6 51	4 36	7 6	5 14	h m	m	m
12 Wed.	m 15 53	6 22	5 6	7 43	6 42	6 31	4 57	7 53	6 42	6 41	4 47	8 5	6 20	6 52	4 35	8 17	6 7	h m	m	m
13 Thu.	m 15 45	6 23	5 5	8 46	7 41	6 32	4 56	8 56	7 31	6 42	4 46	9 8	7 19	6 54	4 34	9 21	7 6	h m	m	m
14 Fri.	m 15 36	6 24	5 5	9 43	8 41	6 33	4 56	9 53	8 32	6 44	4 45	10 4	8 21	6 55	4 33	10 17	8 8	h m	m	m
15 Sat.	m 15 27	6 25	5 4	10 35	9 41	6 34	4 55	10 43	9 32	6 45	4 44	10 53	9 23	6 57	4 32	11 5	9 12	h m	m	m
16 Sun.	m 15 17	6 26	5 4	11 20	10 39	6 35	4 54	11 27	10 32	6 46	4 43	11 35	10 25	7 58	4 31	11 44	10 16	h m	m	m
17 Mon.	m 15 6	6 27	5 4	12 1	11 35	6 36	4 54	12 5	11 31	6 47	4 42	12 12	11 25	6 59	4 30	12 19	11 19	h m	m	m
18 Tue.	m 14 54	6 28	5 3	12 37	11 41	6 37	4 53	12 41	11 31	6 48	4 42	12 45	11 25	7 1	4 29	12 50	10 51	h m	m	m
19 Wed.	m 14 42	6 28	5 3	1 12	0 29	6 38	4 53	1 14	0 27	6 49	4 41	1 16	0 24	7 2	4 28	1 18	0 20	h m	m	m
20 Thu.	m 14 28	6 29	5 2	1 46	1 23	6 39	4 52	1 45	1 22	6 50	4 41	1 45	1 21	7 4	4 27	1 45	1 20	h m	m	m
21 Fri.	m 14 14	6 30	5 2	2 19	2 15	6 40	4 52	2 17	2 16	6 51	4 40	2 14	2 18	7 5	4 26	2 12	2 19	h m	m	m
22 Sat.	m 13 59	6 31	5 2	2 53	3 6	6 41	4 52	2 49	3 9	6 52	4 39	2 44	3 13	7 6	4 25	2 39	3 17	h m	m	m
23 Sun.	m 13 43	6 32	5 1	3 29	3 58	6 42	4 51	3 22	4 3	6 53	4 39	3 16	4 9	7 7	4 25	3 8	4 16	h m	m	m
24 Mon.	m 13 27	6 33	5 1	4 6	4 50	6 43	4 51	3 59	4 56	6 55	4 38	3 51	5 4	7 9	4 24	3 50	5 14	h m	m	m
25 Tue.	m 13 9	6 33	5 0	4 47	5 42	6 44	4 50	4 38	5 50	6 56	4 38	4 29	5 59	7 10	4 24	4 16	6 11	h m	m	m
26 Wed.	m 12 51	6 34	5 0	5 31	6 34	6 45	4 50	5 22	6 44	6 57	4 37	5 11	6 54	7 11	4 23	4 57	7 6	h m	m	m
27 Thu.	m 12 32	6 35	5 0	6 18	7 25	6 46	4 50	6 8	7 35	6 58	4 37	5 57	7 47	7 12	4 22	5 44	8 0	h m	m	m
28 Fri.	m 12 13	6 36	5 0	7 9	8 15	6 47	4 50	6 59	8 25	6 59	4 36	6 48	8 37	7 13	4 22	6 35	8 50	h m	m	m
29 Sat.	m 11 52	6 36	5 0	8 3	9 3	6 47	4 49	7 54	9 12	7 0	4 36	7 44	9 23	7 15	4 21	7 31	9 36	h m	m	m
30 Sun.	m 11 31	6 37	5 0	8 59	9 48	6 48	4 49	8 51	9 57	7 1	4 35	8 43	10 6	7 16	4 21	8 32	10 17	h m	m	m

DECEMBER 1958

Dec.	Sun fast	LOCAL CIVIL TIME Latitude 30° n.			LOCAL CIVIL TIME Latitude 35° n.			LOCAL CIVIL TIME Latitude 40° n.			LOCAL CIVIL TIME Latitude 45° n.			a-factor, moonrise		
		Sun rise	Sun set	Moon- rise	Moon- set	Sun rise	Sun set	Moon- rise	Moon- set	Sun rise	Sun set	Moon- rise	Moon- set	Moon's upper transit	m	m
1 Mon.	m s	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	105°	120°
2 Tue.	11 10	6 38	5 0	9 57	10 32	6 49	4 49	9 51	10 38	7 2	4 35	9 44	10 46	3 42	2	5
3 Wed.	10 47	6 39	5 0	10 56	11 12	6 50	4 49	10 52	11 18	7 3	4 35	10 48	11 23	4 32	1	3
4 Thu.	10 24	6 40	5 0	11 57	11 52	6 51	4 48	11 54	11 56	7 4	4 35	11 53	11 58	4 30	1	3
5 Fri.	10 1	6 40	5 0	.....	12 32	6 51	4 48	.....	12 33	7 5	4 35	.....	12 33	5 22	1	3
6 Sat.	9 36	6 41	5 0	0 58	1 13	6 52	4 48	0 59	1 10	7 6	4 35	0 59	1 9	6 12	1	3
7 Sun.	9 12	6 42	5 0	2 2	1 54	6 53	4 48	2 5	1 51	7 7	4 35	2 9	1 46	7 2	2	3
8 Mon.	8 46	6 43	5 0	3 7	2 40	6 54	4 48	3 12	2 31	7 8	4 35	3 19	2 26	7 55	2	3
9 Tue.	8 20	6 43	5 0	4 14	3 29	6 55	4 48	4 21	3 24	7 9	4 35	4 30	3 11	8 50	2	3
10 Wed.	7 54	6 44	5 1	5 20	4 23	6 55	4 49	5 29	4 14	7 9	4 35	5 40	4 2	9 47	2	4
11 Thu.	7 27	6 44	5 1	6 25	5 20	6 56	4 49	6 35	5 10	7 10	4 35	6 46	4 59	10 46	2	5
12 Fri.	7 0	6 45	5 1	7 26	6 21	6 57	4 49	7 36	6 11	7 11	4 35	7 47	6 0	11 47	3	5
13 Sat.	6 32	6 46	5 1	8 22	7 23	6 58	4 49	8 30	7 14	7 12	4 35	8 41	7 3	12 47	3	5
14 Sun.	6 4	6 47	5 1	9 11	8 23	6 59	4 49	9 19	8 16	7 13	4 35	9 29	8 7	1 45	3	5
15 Mon.	5 35	6 47	5 2	9 55	9 23	6 59	4 50	10 2	9 17	7 13	4 36	10 9	9 11	2 40	3	5
16 Tue.	5 7	6 48	5 2	10 35	10 19	7 0	4 50	10 39	10 16	7 14	4 36	10 45	10 11	3 32	3	5
17 Wed.	4 38	6 49	5 2	11 11	11 14	7 1	4 50	11 14	11 12	7 15	4 36	11 17	11 10	4 20	2	5
18 Thu.	3 39	6 49	5 2	11 46	.....	7 2	4 50	11 47	.....	7 16	4 36	11 47	.....	5 6	2	5
19 Fri.	3 10	6 50	5 3	12 20	0 7	7 2	4 51	12 18	0 7	7 16	4 37	12 17	0 8	5 50	2	5
20 Sat.	2 40	6 51	5 4	1 28	1 51	7 3	4 52	1 23	1 55	7 17	4 37	12 46	1 5	6 33	2	5
21 Sun.	2 10	6 51	5 4	2 5	2 43	7 4	4 52	2 49	2 49	7 18	4 38	1 50	2 0	7 15	2	5
22 Mon.	1 40	6 52	5 5	2 44	3 35	7 4	4 53	3 42	3 42	7 18	4 38	2 26	3 51	7 59	2	5
23 Tue.	1 11	6 52	5 5	3 27	4 27	7 5	4 53	4 36	4 36	7 19	4 39	3 7	4 46	8 43	2	5
24 Wed.	0 41	6 53	5 6	4 13	5 19	7 5	4 54	5 29	5 29	7 19	4 39	3 52	5 40	10 17	2	4
25 Thu.	0 11	6 53	5 6	5 3	6 10	7 6	4 54	6 20	6 20	7 20	4 40	4 42	6 31	5 53	11	6
26 Fri.	SLOW	6 54	5 7	5 57	7 0	7 6	4 55	5 48	7 10	7 20	4 40	5 37	7 21	6 45	11	6
27 Sat.	0 48	6 54	5 8	6 53	7 47	7 6	4 56	6 45	7 55	7 20	4 41	6 36	8 16	7 33	2	4
28 Sun.	1 18	6 55	5 8	7 51	8 32	7 7	4 56	7 45	8 39	7 21	4 42	7 37	8 47	8 18	2	3
29 Mon.	1 47	6 55	5 9	8 50	9 14	7 7	4 57	8 46	9 19	7 21	4 42	8 40	9 26	8 57	2	3
30 Tue.	2 16	6 56	5 9	9 51	9 54	7 8	4 57	9 48	9 58	7 22	4 43	9 45	10 2	9 33	2	3
31 Wed.	2 45	6 56	5 10	10 52	10 33	7 8	4 58	10 51	10 35	7 22	4 44	10 51	10 36	10 7	1	3

Longitude and Latitude of Foreign Cities and Time Corresponding to 12:00 Noon, E.S.T.

City	Long.	Lat.	Time	City	Long.	Lat.	Time
	° ' "	° ' "			° ' "	° ' "	
Aberdeen, Scotland.....	2 9 w	57 9 n	5:00 p.m.	Lima, Peru.....	77 2 w	12 0 s	12:00 noon
Adelaide, Australia.....	138 36 e	34 55 s	2:30 a.m.*	Lisbon, Portugal.....	9 9 w	38 44 n	5:00 p.m.
Algiers, Algeria.....	3 0 e	36 50 n	5:00 p.m.	Liverpool, England.....	3 0 w	53 25 n	5:00 p.m.
Amsterdam, Netherlands.....	4 53 e	52 22 n	5:00 p.m.	London, England.....	0 5 w	51 32 n	5:00 p.m.
Ankara, Turkey.....	32 55 e	39 55 n	7:00 p.m.	Lyon, France.....	4 50 e	45 45 n	5:00 p.m.
Asunción, Paraguay.....	57 40 w	25 15 s	1:00 p.m.	Madrid, Spain.....	3 42 w	40 26 n	5:00 p.m.
Athens, Greece.....	23 43 e	37 58 n	7:00 p.m.	Makassar, Celebes.....	119 30 e	5 9 s	1:00 a.m.*
Auckland, New Zealand.....	174 45 e	36 52 s	5:00 a.m.*	Manchester, England.....	2 15 w	53 30 n	5:00 p.m.
Bangkok, Thailand.....	100 30 e	13 45 n	0:00 a.m.*	Manila, Philippines.....	120 57 e	14 35 n	1:00 a.m.*
Barcelona, Spain.....	2 9 e	41 23 n	5:00 p.m.	Marseille, France.....	5 20 e	43 20 n	5:00 p.m.
Belém, Brazil.....	48 29 w	1 28 s	2:00 p.m.	Mazatlán, Mexico.....	106 25 w	23 12 n	11:00 a.m.
Belfast, Northern Ireland.....	5 56 w	54 37 n	5:00 p.m.	Mecca, Saudi Arabia.....	39 45 e	21 29 n	8:00 p.m.
Belgrade, Yugoslavia.....	20 32 e	44 52 n	6:00 p.m.	Melbourne, Australia.....	144 58 e	37 47 s	3:00 a.m.*
Berlin, Germany.....	13 25 e	52 30 n	6:00 p.m.	Mexico City, Mexico.....	99 7 w	19 26 n	11:00 a.m.
Birmingham, England.....	1 55 w	52 25 n	5:00 p.m.	Milan, Italy.....	9 10 e	45 27 n	6:00 p.m.
Bogotá, Colombia.....	74 15 w	4 32 n	12:00 noon	Montevideo, Uruguay.....	56 10 w	34 53 s	1:30 p.m.
Bombay, India.....	72 48 e	19 0 n	10:30 p.m.	Moscow, U.S.S.R.....	37 36 e	55 45 n	7:00 p.m.
Bordeaux, France.....	0 31 w	44 50 n	5:00 p.m.	Munich, Germany.....	11 35 e	48 8 n	6:00 p.m.
Bremen, Germany.....	8 49 e	53 5 n	6:00 p.m.	Nagasaki, Japan.....	129 57 e	32 48 n	2:00 a.m.*
Brisbane, Australia.....	153 8 e	27 29 s	3:00 a.m.*	Nagoya, Japan.....	136 56 e	35 7 n	2:00 a.m.*
Bristol, England.....	2 35 w	51 28 n	5:00 p.m.	Nairobi, Kenya.....	36 55 e	1 25 n	8:00 p.m.
Brussels, Belgium.....	4 22 e	50 52 n	5:00 p.m.	Nanking, China.....	118 53 e	32 3 n	1:00 a.m.*
Bucharest, Rumania.....	26 7 e	44 25 n	7:00 p.m.	Naples, Italy.....	14 15 e	40 50 n	6:00 p.m.
Budapest, Hungary.....	19 5 e	47 30 n	6:00 p.m.	Newcastle-on-Tyne, Eng.....	1 37 w	54 58 n	5:00 p.m.
Buenos Aires, Argentina.....	58 22 w	34 35 s	1:00 p.m.	Odessa, U.S.S.R.....	30 48 e	46 27 n	7:00 p.m.
Cairo, Egypt.....	31 21 e	30 2 n	7:00 p.m.	Osaka, Japan.....	135 30 e	34 32 n	2:00 a.m.*
Calcutta, India.....	88 24 e	22 34 n	10:30 p.m.	Oslo, Norway.....	10 42 e	59 57 n	6:00 p.m.
Canton, China.....	113 15 e	23 7 n	1:00 a.m.*	Panamá City, Panamá.....	79 32 w	8 58 n	12:00 noon
Capetown, U. of S. Af.....	18 22 e	33 55 s	7:00 p.m.	Paramaribo, Surinam.....	55 15 w	5 45 n	1:30 p.m.
Caracas, Venezuela.....	67 2 w	10 28 n	12:30 p.m.	Paris, France.....	2 20 e	48 48 n	5:00 p.m.
Cayenne, French Guiana.....	52 18 w	4 49 n	1:30 p.m.	Peiping, China.....	116 25 e	39 55 n	1:00 a.m.*
Chihuahua, Mexico.....	106 5 w	28 37 n	11:00 a.m.	Perth, Australia.....	115 52 e	31 57 s	1:00 a.m.*
Chungking, China.....	106 34 e	29 46 n	0:00 a.m.*	Plymouth, England.....	4 5 w	50 25 n	5:00 p.m.
Copenhagen, Denmark.....	12 34 e	55 40 n	6:00 p.m.	Port Moresby, Papua Ter.....	147 8 e	9 25 s	3:00 a.m.*
Córdoba, Argentina.....	64 10 w	31 28 s	1:00 p.m.	Prague, Czechoslovakia.....	14 26 e	50 5 n	6:00 p.m.
Dakar, French West Africa.....	17 28 w	14 40 n	4:00 p.m.	Rangoon, Burma.....	96 0 e	16 50 n	11:30 p.m.
Darwin, Australia.....	130 51 e	12 28 s	2:30 a.m.*	Reykjavik, Iceland.....	21 58 w	64 4 n	4:00 p.m.
Dublin, Ireland.....	6 15 w	53 20 n	5:00 p.m.	Rio de Janeiro, Brazil.....	43 12 w	22 57 s	2:00 p.m.
Durban, U. of S. Af.....	30 53 e	29 53 s	7:00 p.m.	Rome, Italy.....	12 27 e	41 54 n	6:00 p.m.
Edinburgh, Scotland.....	3 10 w	55 55 n	5:00 p.m.	San Juan, Puerto Rico.....	66 10 w	18 30 n	1:00 p.m.
Frankfurt, Germany.....	8 41 e	50 7 n	6:00 p.m.	Santiago, Chile.....	70 45 w	33 28 s	1:00 p.m.
Georgetown, British Guiana.....	58 15 w	6 45 n	1:30 p.m.	São Paulo, Brazil.....	46 31 w	23 31 s	2:00 p.m.
Glasgow, Scotland.....	4 15 w	55 50 n	5:00 p.m.	São Salvador, Brazil.....	38 27 w	12 56 s	2:00 p.m.
Guatemala City, Guatemala.....	90 31 w	14 37 n	11:00 a.m.	Shanghai, China.....	121 28 e	31 10 n	1:00 a.m.*
Guayaquil, Ecuador.....	79 56 w	2 10 s	12:00 noon	Singapore, British Malaya.....	103 55 e	1 14 n	0:30 a.m.*
Hamburg, Germany.....	10 2 e	53 33 n	6:00 p.m.	Sofia, Bulgaria.....	23 20 e	42 40 n	7:00 p.m.
Hammerfest, Norway.....	23 38 e	70 38 n	6:00 p.m.	Stockholm, Sweden.....	18 3 e	59 17 n	6:00 p.m.
Havana, Cuba.....	82 23 w	23 8 n	12:00 noon	Sydney, Australia.....	151 0 e	34 0 s	3:00 a.m.*
Helsinki, Finland.....	25 0 e	60 10 n	7:00 p.m.	Tananarive, Madagascar.....	47 33 e	18 50 s	8:00 p.m.
Hobart, Tasmania.....	147 19 e	42 52 s	3:00 a.m.*	Teheran, Iran.....	51 45 e	35 45 s	8:30 p.m.
Iquique, Chile.....	70 7 w	20 10 s	1:00 p.m.	Tokyo, Japan.....	139 45 e	35 40 n	2:00 a.m.*
Irkutsk, U.S.S.R.....	104 20 e	52 30 n	0:00 a.m.*	Tripoli, Libya.....	13 12 e	32 57 n	6:00 p.m.
Jakarta, Java.....	106 48 e	6 16 s	1:00 a.m.*	Venice, Italy.....	12 20 e	45 26 n	6:00 p.m.
Jibuti, French Somaliland.....	43 3 e	11 30 n	8:00 p.m.	Veracruz, Mexico.....	96 10 w	19 10 n	11:00 a.m.
Johannesburg, U. of S. Af.....	28 4 e	26 12 s	7:00 p.m.	Vienna, Austria.....	16 20 e	48 14 n	6:00 p.m.
Kingston, Jamaica.....	76 49 w	17 59 n	12:00 noon	Vladivostok, U.S.S.R.....	132 0 e	43 10 n	2:00 a.m.*
La Paz, Bolivia.....	68 22 w	16 27 s	1:00 p.m.	Warsaw, Poland.....	21 0 e	52 14 n	6:00 p.m.
Leeds, England.....	1 30 w	53 45 n	5:00 p.m.	Wellington, New Zealand.....	174 47 e	41 17 s	5:00 a.m.*
Leningrad, U.S.S.R.....	30 18 e	59 56 n	7:00 p.m.	Zürich, Switzerland.....	8 31 e	47 21 n	6:00 p.m.
Léopoldville, Belgian Congo.....	15 17 e	4 18 s	6:00 p.m.				

* On the following day.

Longitude, Latitude, Time and Magnetic Declination of U. S. and Canadian Cities

The last column shows the magnetic declination or angle which the magnetic meridian makes with the true (geographic) meridian. The value being marked w or e, the north end of the compass needle points west or east respectively of true north by that number of degrees.

City	Long. w.	Lat. n.	Time*	Dec.	City	Long. w.	Lat. n.	Time*	Dec.
Albany, N. Y.	73 45	42 40	12:00 noon	13 w	Milwaukee, Wis.	87 55	43 2	11:00 a.m.	2 e
Amarillo, Tex.	101 50	35 11	11:00 a.m.	12 e	Minneapolis, Minn.	93 14	44 59	11:00 a.m.	7 e
Atlanta, Ga.	84 23	33 45	12:00 noon	2 e	Mobile, Ala.	88 3	30 42	11:00 a.m.	5 e
Atlantic City, N. J.	74 25	39 22	12:00 noon	10 w	Montgomery, Ala.	86 18	32 21	11:00 a.m.	3 e
Austin, Nev.	117 4	39 29	9:00 a.m.	18 e	Montpelier, Vt.	72 32	44 15	12:00 noon	16 w
Baker, Oreg.	117 50	44 47	9:00 a.m.	21 e	Montreal, Que.	73 35	45 30	12:00 noon	16 w
Baltimore, Md.	76 38	39 18	12:00 noon	8 w	Moose Jaw, Sask.	105 31	50 37	10:00 a.m.	18 e
Bangor, Maine.	68 47	44 48	12:00 noon	19 w	Nashville, Tenn.	86 47	36 10	11:00 a.m.	3 e
Birmingham, Ala.	86 50	33 30	11:00 a.m.	3 e	Needles, Calif.	114 36	34 50	9:00 a.m.	15 e
Bismarck, N. Dak.	100 47	46 48	11:00 a.m.	14 e	Nelson, B. C.	117 17	49 30	9:00 a.m.	23 e
Boise, Idaho.	116 13	43 36	10:00 a.m.	19 e	New Haven, Conn.	72 55	41 19	12:00 noon	12 w
Boston, Mass.	71 5	42 21	12:00 noon	15 w	New Orleans, La.	90 4	29 57	11:00 a.m.	6 e
Buffalo, N. Y.	78 50	42 55	12:00 noon	7 w	New York, N. Y.	73 58	40 47	12:00 noon	12 w
Calgary, Alta.	114 1	51 1	10:00 a.m.	23 e	Nogales, Ariz.	110 56	31 21	10:00 a.m.	14 e
Carlsbad, N. Mex.	104 15	32 26	10:00 a.m.	13 e	Nome, Alaska	165 30	64 25	6:00 a.m.	19 e
Charleston, S. C.	79 56	32 47	12:00 noon	2 w	North Platte, Nebr.	100 46	41 8	11:00 a.m.	12 e
Charleston, W. Va.	81 38	38 21	12:00 noon	2 w	Oklahoma City, Okla.	97 28	35 26	11:00 a.m.	10 e
Charlotte, N. C.	80 50	35 14	12:00 noon	2 w	Ottawa, Ont.	75 43	45 24	12:00 noon	14 w
Cheyenne, Wyo.	104 52	41 9	10:00 a.m.	15 e	Philadelphia, Pa.	75 10	39 57	12:00 noon	10 w
Chicago, Ill.	87 37	41 50	11:00 a.m.	2 e	Phoenix, Ariz.	112 4	33 29	10:00 a.m.	15 e
Cincinnati, Ohio	84 30	39 8	12:00 noon	1 e	Pierre, S. Dak.	100 21	44 22	11:00 a.m.	12 e
Cleveland, Ohio	81 37	41 28	12:00 noon	5 w	Pittsburgh, Pa.	79 57	40 27	12:00 noon	5 w
Columbia, S. C.	81 2	34 0	12:00 noon	1 w	Port Arthur, Ont.	89 17	48 30	12:00 noon	1 e
Columbus, Ohio	83 1	40 0	12:00 noon	2 w	Portland, Maine.	70 15	43 40	12:00 noon	17 w
Dallas, Tex.	96 46	32 46	11:00 a.m.	9 e	Portland, Oreg.	122 41	45 31	9:00 a.m.	23 e
Denver, Colo.	105 0	39 45	10:00 a.m.	14 e	Providence, R. I.	71 24	41 50	12:00 noon	16 w
Des Moines, Iowa	93 37	41 35	11:00 a.m.	7 e	Quebec, Que.	71 11	46 49	12:00 noon	20 w
Detroit, Mich.	83 3	42 20	12:00 noon	3 w	Raleigh, N. C.	78 39	35 46	12:00 noon	4 w
Dubuque, Iowa.	90 40	42 31	11:00 a.m.	5 e	Reno, Nev.	119 49	39 30	9:00 a.m.	18 e
Duluth, Minn.	92 5	46 49	11:00 a.m.	7 e	Richfield, Utah.	112 5	38 46	10:00 a.m.	17 e
Eastport, Maine.	67 0	44 54	12:00 noon	21 w	Richmond, Va.	77 29	37 33	12:00 noon	6 w
El Centro, Calif.	115 33	32 38	9:00 a.m.	15 e	Roanoke, Va.	79 57	37 17	12:00 noon	3 w
El Paso, Tex.	106 29	31 46	11:00 a.m.	13 e	Sacramento, Calif.	121 30	38 35	9:00 a.m.	17 e
Eugene, Oreg.	123 5	44 3	9:00 a.m.	22 e	St. John, N. B.	66 10	45 18	1:00 p.m.	22 e
Fargo, N. Dak.	96 48	46 52	11:00 a.m.	10 e	St. Louis, Mo.	90 12	38 35	11:00 a.m.	5 e
Flagstaff, Ariz.	111 41	35 13	10:00 a.m.	15 e	Salmon, Idaho.	113 54	45 11	10:00 a.m.	20 e
Fresno, Calif.	119 48	36 44	9:00 a.m.	17 e	Salt Lake City, Utah	111 54	40 46	10:00 a.m.	17 e
Garden City, Kans.	100 53	37 58	10:00 a.m.	13 e	San Antonio, Tex.	98 33	29 23	11:00 a.m.	10 e
Grand Junction, Colo.	108 33	39 5	10:00 a.m.	15 e	San Diego, Calif.	117 10	32 42	9:00 a.m.	15 e
Grand Rapids, Mich.	85 40	42 58	11:00 a.m.	1 e	San Francisco, Calif.	122 26	37 47	9:00 a.m.	18 e
Havre, Mont.	109 43	48 33	10:00 a.m.	20 e	Santa Fe, N. Mex.	105 57	35 41	10:00 a.m.	13 e
Helena, Mont.	112 2	46 35	10:00 a.m.	19 e	Sault Ste. Marie, Mich.	84 21	46 30	11:00 a.m.	4 w
Honolulu, Hawaii.	157 50	21 18	7:00 a.m.	—	Savannah, Ga.	81 5	32 5	12:00 noon	0
Hogquiam, Wash.	123 54	46 59	9:00 a.m.	23 e	Scranton, Pa.	75 39	41 24	12:00 noon	10 w
Hot Springs, Ark.	93 3	34 31	11:00 a.m.	8 e	Seattle, Wash.	122 20	47 37	9:00 a.m.	23 e
Idaho Falls, Idaho.	112 1	43 30	10:00 a.m.	18 e	Shreveport, La.	93 42	32 28	11:00 a.m.	8 e
Indianapolis, Ind.	86 10	39 46	11:00 a.m.	1 e	Silver City, N. Mex.	108 18	32 46	10:00 a.m.	14 e
Jackson, Miss.	90 12	32 20	11:00 a.m.	7 e	Sioux Falls, S. Dak.	96 44	43 33	11:00 a.m.	11 e
Jacksonville, Fla.	81 40	30 22	12:00 noon	1 e	Sitka, Alaska.	135 15	57 10	9:00 a.m.	30 e
Kansas City, Mo.	94 35	39 6	11:00 a.m.	9 e	Spokane, Wash.	117 26	47 40	9:00 a.m.	23 e
Key West, Fla.	81 48	24 33	12:00 noon	3 e	Springfield, Ill.	89 38	39 48	11:00 a.m.	4 e
Lansing, Ont.	76 30	44 15	12:00 noon	12 w	Springfield, Mass.	72 34	42 6	12:00 noon	14 w
Lamath Falls, Oreg.	121 44	42 10	9:00 a.m.	19 e	Springfield, Mo.	93 17	37 13	11:00 a.m.	7 e
Lexington, Tenn.	83 56	35 57	11:00 a.m.	0	Syracuse, N. Y.	76 8	43 2	12:00 noon	11 w
Lander, Wyo.	108 40	42 50	10:00 a.m.	17 e	Tampa, Fla.	82 27	27 57	12:00 noon	2 e
Las Vegas, Nev.	115 12	36 10	9:00 a.m.	16 e	Toronto, Ont.	79 24	43 40	12:00 noon	8 w
Lawton, Okla.	117 2	46 24	9:00 a.m.	21 e	Trinidad, Colo.	104 30	37 10	10:00 a.m.	14 e
Lincoln, Nebr.	96 40	40 50	11:00 a.m.	10 e	Victoria, B. C.	123 21	48 25	9:00 a.m.	24 e
London, Ont.	81 34	43 2	12:00 noon	5 w	Watertown, N. Y.	75 55	43 58	12:00 noon	13 w
Los Angeles, Calif.	118 15	34 3	9:00 a.m.	16 e	Wichita, Kans.	97 17	37 43	11:00 a.m.	10 e
Louisville, Ky.	85 46	38 15	11:00 a.m.	1 e	Wilmington, N. C.	77 57	34 14	12:00 noon	3 w
Manchester, N. H.	71 30	43 0	12:00 noon	16 w	Winnipeg, Man.	97 7	49 54	11:00 a.m.	11 e
Memphis, Tenn.	90 3	35 9	11:00 a.m.	6 e	Yakima, Wash.	120 33	46 34	9:00 a.m.	22 e
Miami, Fla.	80 12	25 46	12:00 noon	1 e					

* Corresponding to 12:00 noon, E.S.T.

1957 JANUARY													FEBRUARY													MARCH													APRIL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Perpetual Calendar 1800-2000 A.D.

Day of the month	Jan. Oct.	Apr. Jul. Jan.	Sept. Dec.	Jun.	Feb. Mar. Nov.	Aug. Feb.	May	
1 8 15 22 29.....	A	B	C	D	E	F	G	Mon.
2 9 16 23 30.....	G	A	B	C	D	E	F	Tue.
3 10 17 24 31.....	F	G	A	B	C	D	E	Wed.
4 11 18 25.....	E	F	G	A	B	C	D	Thur.
5 12 19 26.....	D	E	F	G	A	B	C	Fri.
6 13 20 27.....	C	D	E	F	G	A	B	Sat.
7 14 21 28.....	B	C	D	E	F	G	A	Sun.
EXAMPLES	.....	.....	1800	1801	1802	1803	.....
	1804	1805	1806	1807	.....	1808	.....	1809
	1810	1811	.....	1812	1813	1814	.....	1815
	.....	1816	1817	1818	1819	.....	.....	1820
	1821	1822	1823	.....	1824	1825	.....	1826
	1827	.....	1828	1829	1830	1831	.....	.....
	1832	1833	1834	1835	.....	1836	.....	1837
	1838	1839	.....	1840	1841	1842	.....	1843
	.....	1844	1845	1846	1847	.....	.....	1848
	1849	1850	1851	.....	1852	1853	.....	1854
(1) Given Nov. 20, 1891, to find the day of the week. Under Nov., opposite 20, is G. In the 1891 column, opposite G is Fri., <i>ans.</i>	1855	.....	1856	1857	1858	1859	.....	.....
(2) Given Fri., Oct. —, 1868, to find the possible days of the month. In the 1868 column, opposite Fri. is G. Under Oct., G gives 2, 9, 16, 23, 30, <i>ans.</i> , the Fridays of Oct., 1868.	1860	1861	1862	1863	.....	1864	.....	1865
	1866	1867	.....	1868	1869	1870	.....	1871
	.....	1872	1873	1874	1875	.....	.....	1876
	1877	1878	1879	.....	1880	1881	.....	1882
(3) Given Mon., — 5, 1811, to find the possible months. In the 1811 column, opposite Mon. is B. Opposite 5, B gives Aug., the only common-year month available, <i>ans.</i>	1883	.....	1884	1885	1886	1887	.....	.....
	1888	1889	1890	1891	.....	1892	.....	1893
	1894	1895	.....	1896	1897	1898	.....	1899
	1900	1901	1902	1903	.....	1904	.....	1905
	1906	1907	.....	1908	1909	1910	.....	1911
(4) Given Sat., Feb. 29, —, to find the possible years. Under Feb., leap-year, opposite 29, is F. Opposite Sat. F gives leap-years 1812, 1840 1868, 1896, etc., <i>ans.</i>	.....	1912	1913	1914	1915	.....	.....	1916
	1917	1918	1919	.....	1920	1921	.....	1922
	1923	.....	1924	1925	1926	1927	.....	.....
	1928	1929	1930	1931	.....	1932	.....	1933
	1934	1935	.....	1936	1937	1938	.....	1939
	.....	1940	1941	1942	1943	.....	.....	1944
	1945	1946	1947	.....	1948	1949	.....	1950
	1951	.....	1952	1953	1954	1955	.....	.....
	1956	1957	1958	1959	.....	1960	.....	1961
	1962	1963	.....	1964	1965	1966	.....	1967
	.....	1968	1969	1970	1971	.....	.....	1972
	1973	1974	1975	.....	1976	1977	.....	1978
	1979	.....	1980	1981	1982	1983	.....	.....
	1984	1985	1986	1987	.....	1988	.....	1989
	1990	1991	.....	1992	1993	1994	.....	1995
	.....	1996	1997	1998	1999	.....	.....	2000

Morning and Evening Stars and Planets in 1958

MERCURY

Morning star, Jan. 1 to Mar. 3
 Evening star, Mar. 3 to Apr. 16
 Morning star, Apr. 16 to June 18
 Evening star, June 18 to Aug. 23
 Morning star, Aug. 23 to Oct. 5
 Evening star, Oct. 5 to Dec. 10
 Morning star, Dec. 10 to Dec. 31

VENUS

Evening star, Jan. 1 to Jan. 28
 Morning star, Jan. 28 to Nov. 11
 Evening star, Nov. 11 to Dec. 31

MARS

Morning star, Jan. 1 to Nov. 16
 Evening star, Nov. 16 to Dec. 31

JUPITER

Morning star, Jan. 1 to Apr. 17
 Evening star, Apr. 17 to Nov. 5
 Morning star, Nov. 5 to Dec. 31

SATURN

Morning star, Jan. 1 to June 13
 Evening star, June 13 to Dec. 20
 Morning star, Dec. 20 to Dec. 31

Mercury may be seen over the eastern horizon before sunrise for about 10 days before and after western elongation from the sun, and similarly over the western horizon after sunset around eastern elongation times. Western elongations occur Jan. 15 (Mercury in western Sagittarius), May 14 (in southeastern Pisces), Sept. 9 (in Leo, just west of Regulus), and Dec. 29 (in southern Ophiuchus, northeast of Antares). Eastern elongations occur Mar. 29 (in eastern Pisces), July 26 (in Leo, just south of Regulus), Nov. 20 (in Ophiuchus, east of Antares).

Venus is a bright morning star most of the year and as such is observable in the east before sunrise. The greatest brilliancy occurs March 4, the planet being in northwestern Capricornus, with magnitude -4.3 . Greatest elongation west occurs Apr. 8 in western Aquarius. A fairly close conjunction with the moon occurs March 16.

Mars in January is in Scorpius and Ophiuchus, north of Antares; in March it is in Sagittarius and Capricornus. By July 1 it is in Pisces, and by Oct. 1 it is in Taurus, northwest of Aldebaran. Shortly after this it retrogrades (until late Dec.) and is observable in Taurus and Aries. It is brightest around opposition in mid-November, with magnitude -2.0 .

Jupiter for the first $3\frac{1}{2}$ months is a morning planet east of Spica; then as an evening planet it continues all summer, moving slowly eastward, still not far from Spica. Beginning in the latter part of November it is observable again in the east in Libra. The moon passes by Jupiter, and is rather close on July 22, Aug. 19 and Sept. 16.

Saturn is seen in the morning sky during the first half of the year, in the southern part of Ophiuchus, northeast of Antares. It continues as an evening planet during the summer and autumn in about the same place among the stars. Mars is in conjunction with Saturn Jan. 23, Mars being south of Saturn.

Uranus is in Cancer all the year, east of the Beehive star cluster, and 10° to 15° west of the sickle of Leo. It is observable in binoculars except when too near the sun in July and August. On Aug. 26 Venus passes close to and just north of Uranus. *Neptune* is in Virgo all the year, around 12° east of Spica, and is visible in a low-power telescope, except when the sun is too near in Oct. and Nov. On Sept. 26, Jupiter and Neptune are in conjunction, Jupiter being less than 1° south of Neptune. *Pluto* is observable only in a large telescope, and is in Leo, a short distance east of the star Gamma Leonis.

Phases of the Moon for 1958

	E. S. T.			C. S. T.			M. S. T.			P. S. T.		
	d	h	m	d	h	m	d	h	m	d	h	m
Full Moon JANUARY.....	5	3	9 pm	5	2	9 pm	5	1	9 pm	5	12	9 pm
Last Quarter.....	12	9	1 am	12	8	1 am	12	7	1 am	12	6	1 am
New Moon.....	19	5	8 pm	19	4	8 pm	19	3	8 pm	19	2	8 pm
First Quarter.....	27	9	16 pm	27	8	16 pm	27	7	16 pm	27	6	16 pm
Full Moon FEBRUARY.....	4	3	5 am	4	2	5 am	4	1	5 am	4	0	5 am
Last Quarter.....	10	6	34 pm	10	5	34 pm	10	4	34 pm	10	3	34 pm
New Moon.....	18	10	38 am	18	9	38 am	18	8	38 am	18	7	38 am
First Quarter.....	26	3	51 pm	26	2	51 pm	26	1	51 pm	26	12	51 pm
Full Moon MARCH.....	5	1	28 pm	5	12	28 pm	5	11	28 am	5	10	28 am
Last Quarter.....	12	5	48 am	12	4	48 am	12	3	48 am	12	2	48 am
New Moon.....	20	4	50 am	20	3	50 am	20	2	50 am	20	1	50 am
First Quarter.....	28	6	18 am	28	5	18 am	28	4	18 am	28	3	18 am
Full Moon APRIL.....	3	10	45 pm	3	9	45 pm	3	8	45 pm	3	7	45 pm
Last Quarter.....	10	6	50 pm	10	5	50 pm	10	4	50 pm	10	3	50 pm
New Moon.....	18	10	23 pm	18	9	23 pm	18	8	23 pm	18	7	23 pm
First Quarter.....	26	4	36 pm	26	3	36 pm	26	2	36 pm	26	1	36 pm
Full Moon MAY.....	3	7	23 am	3	6	23 am	3	5	23 am	3	4	23 am
Last Quarter.....	10	9	37 am	10	8	37 am	10	7	37 am	10	6	37 am
New Moon.....	18	2	0 pm	18	1	0 pm	18	12	0 am	18	11	0 am
First Quarter.....	25	11	38 pm	25	10	38 pm	25	9	38 pm	25	8	38 pm
Full Moon JUNE.....	1	3	55 pm	1	2	55 pm	1	1	55 pm	1	12	55 pm
Last Quarter.....	9	1	59 am	9	0	59 am	8	11	59 pm	8	10	59 pm
New Moon.....	17	2	59 am	17	1	59 am	17	0	59 am	16	11	59 pm
First Quarter.....	24	4	44 am	24	3	44 am	24	2	44 am	24	1	44 am

Phases of the Moon for 1958 (Contd.)

Full Moon JULY.....	1 1 4 am	1 0 4 am	J'n 30 11 4 pm	J'n 30 10 4 pm
Last Quarter.....	8 7 21 pm	8 6 21 pm	8 5 21 pm	8 4 21 pm
New Moon.....	16 1 33 pm	16 12 33 pm	16 11 33 am	16 10 33 am
First Quarter.....	23 9 19 am	23 8 19 am	23 7 19 am	23 6 19 am
Full Moon.....	30 11 47 am	30 10 47 am	30 9 47 am	30 8 47 am
Last Quarter AUGUST.....	7 12 49 pm	7 11 49 am	7 10 49 am	7 9 49 am
New Moon.....	14 10 33 pm	14 9 33 pm	14 8 33 pm	14 7 33 pm
First Quarter.....	21 2 45 pm	21 1 45 pm	21 12 45 pm	21 11 45 am
Full Moon.....	29 0 53 am	28 11 53 pm	28 10 53 pm	28 9 53 pm
Last Quarter SEPTEMBER.....	6 5 24 am	6 4 24 am	6 3 24 am	6 2 24 am
New Moon.....	13 7 2 am	13 6 2 am	13 5 2 am	13 4 2 am
First Quarter.....	19 10 17 pm	19 9 17 pm	19 8 17 pm	19 7 17 pm
Full Moon.....	27 4 43 pm	27 3 43 pm	27 2 43 pm	27 1 43 pm
Last Quarter OCTOBER.....	5 8 20 pm	5 7 20 pm	5 6 20 pm	5 5 20 pm
New Moon.....	12 3 52 pm	12 2 52 pm	12 1 52 pm	12 12 52 pm
First Quarter.....	19 9 7 am	19 8 7 am	19 7 7 am	19 6 7 am
Full Moon.....	27 10 41 am	27 9 41 am	27 8 41 am	27 7 41 am
Last Quarter NOVEMBER.....	4 9 19 am	4 8 19 am	4 7 19 am	4 6 19 am
New Moon.....	11 1 34 am	11 0 34 am	10 11 34 pm	10 10 34 pm
First Quarter.....	17 11 59 pm	17 10 59 pm	17 9 59 pm	17 8 59 pm
Full Moon.....	26 5 16 am	26 4 16 am	26 3 16 am	26 2 16 am
Last Quarter DECEMBER.....	3 8 24 pm	3 7 24 pm	3 6 24 pm	3 5 24 pm
New Moon.....	10 12 23 pm	10 11 23 am	10 10 23 am	10 9 23 am
First Quarter.....	17 6 52 pm	17 5 52 pm	17 4 52 pm	17 3 52 pm
Full Moon.....	25 10 54 pm	25 9 54 pm	25 8 54 pm	25 7 54 pm

The Sun

There are countless millions of far distant, superheated, self-luminous gaseous bodies called stars and each one is in itself a sun. Our Sun—the star around which our whole solar system revolves—is at a mean distance of 93,003,000 miles from the Earth, has a diameter of 865,390 miles, a surface temperature of about 11,000° F. and an interior temperature estimated at millions of degrees. It has a surface area approximately 12,000 times that of the Earth and in volume or bulk it is about 1,306,000 times the size of the Earth. It is a star of average size and temperature.

The Sun rotates on its axis and, by observation of Sun-spots (great whirling storms in the Sun's atmosphere) and Faculae (bright streaks or areas on the Sun's surface), astronomers have discovered that the rotational speed varies from approximately 24½ days at its equator to approximately 34 days near its poles. The Sun is just one star of the great Milky Way Galaxy that is rotating on its galactic axis at a rate that gives the Sun a galactic traveling speed of 175 miles per second. Furthermore, the Sun is moving toward a point known as "the apex of the Sun's way" in the constellation Hercules at a speed of about 12 miles per second.

What we see when we look at the Sun is the glowing surface called the Photosphere. Extending above this surface is the

Sun's atmosphere consisting of two layers, one extending outward for a few hundred miles from the Sun's surface and called the Reversing Layer for spectroscopic reasons, the other an outer layer extending several thousand miles and called the Chromosphere because of its reddish color due mostly to superheated hydrogen, helium and calcium. Solar "prominences" occasionally burst out from this layer and extend hundreds of thousands of miles above the Sun's surface. Beyond these layers of solar atmosphere and extending to great height is the outermost observable solar feature, the magnificent Corona of exceedingly slight density that provides an awesome spectacle for observers during total eclipses of the Sun.

Comets

In ancient times comets were supposed to be omens of sudden death, war, revolution or other dire events in human affairs and practically nothing was known of their true nature. They still offer puzzling problems to modern astronomers and, with about 1000 listed, new ones are being discovered and charted each year. In general, comets consist of a nucleus (sometimes lacking) surrounded by a head or "coma" (from the Greek word for hair because of its hazy appearance) from which extends the great tail that makes the passage of a comet through our skies such a striking

The Brightest Stars

Star	Constellation	Position, 1950			Mag.	Dist.	On meridian 9 p.m.
		R.A.	Dec.				
		h m °	' "			l.-y.	
Sirius.....	Canis Major.....	6 42.9	-16 39	-1.6	8	Feb. 16	
Canopus.....	Carina.....	6 22.8	-52 40	-0.9	650	Feb. 11	
Alpha Centauri.....	Centaurus.....	14 36.2	-60 38	+0.1	4	June 16	
Vega.....	Lyra.....	18 35.2	+38 44	0.1	23	Aug. 15	
Capella.....	Auriga.....	5 13.0	+45 57	0.2	42	Jan. 24	
Arcturus.....	Boötes.....	14 13.4	+19 27	0.2	32	June 10	
Rigel.....	Orion.....	5 12.1	-8 15	0.3	545	Jan. 24	
Procyon.....	Canis Minor.....	7 36.7	+5 21	0.5	10	Mar. 2	
Achernar.....	Eridanus.....	1 35.9	-57 29	0.6	70	Nov. 30	
Beta Centauri.....	Centaurus.....	14 0.3	-60 8	0.9	130	June 7	
Altair.....	Aquila.....	19 48.3	+8 44	0.9	18	Sept. 3	
Betelgeuse.....	Orion.....	5 52.5	+7 24	0.9	300	Feb. 3	
Aldebaran.....	Taurus.....	4 33.0	+16 25	1.1	54	Jan. 14	
Spica.....	Virgo.....	13 22.6	-10 54	1.2	190	May 28	
Pollux.....	Gemini.....	7 42.3	+28 9	1.2	31	Mar. 3	
Antares.....	Scorpius.....	16 26.3	-26 19	1.2	170	July 14	
Fomalhaut.....	Piscis Austrinus.....	22 54.9	-29 53	1.3	27	Oct. 20	
Deneb.....	Cygnus.....	20 39.7	+45 6	1.3	465	Sept. 16	
Regulus.....	Leo.....	10 5.7	+12 13	1.3	70	Apr. 9	
Beta Crucis.....	Crux.....	12 44.8	-59 25	1.5	465	May 18	
Eta Carinae.....	Carina.....	10 43.1	-59 25	1-7	...	Apr. 17	
Alpha-one Crucis.....	Crux.....	12 23.8	-62 49	1.6	150	May 13	
Castor.....	Gemini.....	7 31.4	+32 0	1.6	44	Feb. 28	
Gamma Crucis.....	Crux.....	12 28.4	-56 50	1.6	...	May 15	
Epsilon Canis Majoris.....	Canis Major.....	6 56.7	-28 54	1.6	325	Feb. 19	
Epsilon Ursae Majoris.....	Ursa Major.....	12 51.8	+56 14	1.7	50	May 20	
Bellatrix.....	Orion.....	5 22.4	+6 18	1.7	215	Jan. 27	
Lambda Scorpii.....	Scorpius.....	17 30.2	-37 4	1.7	205	July 30	
Epsilon Carinae.....	Carina.....	8 21.5	-59 21	1.7	325	Mar. 13	
Mira.....	Cetus.....	2 16.8	-3 12	2-9	250	Dec. 11	
Epsilon Orionis.....	Orion.....	5 33.7	-1 14	1.7	405	Jan. 29	
Beta Tauri.....	Taurus.....	5 23.1	+28 34	1.8	115	Jan. 27	
Beta Carinae.....	Carina.....	9 12.7	-69 31	1.8	...	Mar. 26	
Alpha Trianguli Australis.....	Triangulum Australe.....	16 43.4	-68 56	1.9	130	July 18	
Alpha Persel.....	Perseus.....	3 20.7	+49 41	1.9	190	Dec. 27	
Eta Ursae Majoris.....	Ursa Major.....	13 45.6	+49 34	1.9	220	June 3	
Gamma Geminorum.....	Gemini.....	6 34.8	+16 27	1.9	65	Feb. 14	
Epsilon Sagittarii.....	Sagittarius.....	18 20.9	-34 25	1.9	165	Aug. 12	
Alpha Ursae Majoris.....	Ursa Major.....	11 0.7	+62 1	1.9	90	Apr. 22	
Delta Canis Majoris.....	Canis Major.....	7 6.4	-26 19	2.0	410	Feb. 22	

spectacle. Comets come in varying sizes but the average diameter of the heads of a large number of observed comets is about 80,000 miles and the tail length may stretch out to more than 100,000,000 miles. The density of comets is so low, however, that we can see the stars through them and there is more actual material in one cubic inch of ordinary air than in 2000 cubic miles of the tail of a comet.

The luminous tails of comets were believed, for many centuries, to be merely clouds high in our atmosphere. Tycho Brahe, eccentric Danish astronomer, proved that the comet he observed in 1577 was a celestial object far beyond the limit of the Earth's atmosphere. But the great forward step in the study of comets came when Edmund Halley, who became England's Astronomer Royal, carefully observed a comet in 1682, checked with previous observations, calculated its orbit and pre-

dicted its return to our skies in 1758 or 1759. Halley died in 1742 but the comet, now named after him, reappeared on schedule and a search through ancient records indicated that it had been observed in repeated appearances as far back as 240 B.C. Its last appearance was marked by its perihelion passage in 1910 and its next visit to our skies will occur in 1986. Halley's fulfilled prediction was the first definite proof that comets have regular orbits and time schedules or are, as the astronomers say, "periodic". The known "periods" (time intervals between appearances) of comets vary from the 3.3 years of Encke's Comet to thousands of years for wider travelers. No known great comets are scheduled for appearance in our sky this year.

A curious thing about comets is that their tails always trail from the head in a direction away from the Sun, so that when a comet is moving away from the Sun, the

20 Famous Comets

Year and no.	Name of comet	Period, years
1744	De Chéseaux's Comet	.....
1806	Biela's Comet	6.7
1811 I	Great Comet of 1811	3000
1812	Di Vico's Comet	70.7
1815	Olbers' Comet	74.0
1819 I	Encke's Comet	3.3
1819	Pons-Winnecke Comet	6.0
1835 III	Halley's Comet	76.3
1843 I	Great Comet of 1843	512.4
1844 II	Great Comet of 1844	102,050
1858 VI	Donati's Comet	2,040 (?)
1864 II	Great Comet of 1864	2,800,000
1871 III	Tuttle's Comet	13.8
1874 III	Coggia's Comet	6,000 (?)
1879	Brorsen's Comet	5.6
1881 II	Tebbutt's Comet	.....
1889 VI	Swift's 2nd Comet	7.0
1892 III	Holmes' Comet	6.9
1923	d'Arrest's Comet	6.6
1925 II	Comet Schwassmann-Wachmann	16.2

tall stretches out in front of the head. A comet's tail is so tenuous as to be almost a vacuum. The Earth passed through the tail of Halley's Comet in May, 1910, and on that occasion astronomers heard nothing, felt nothing and saw nothing to indicate that such passage had any observable effect on the Earth.

The Polar Auroras

It has been definitely established that Sun-spots are the direct cause of the greatest electrical show on Earth, a double feature, the Aurora Borealis (Northern Lights) and the Aurora Australis (Southern Lights). Sun-spots are magnetic storms of vast dimensions on the surface of the Sun and they shoot out electrified particles into space. Those that come toward the Earth are drawn toward the Earth's magnetic poles and consequently these magnetic poles are the radiating centers of those spectacular electromagnetic displays in the sky that we commonly call the "Northern Lights" or the "Southern Lights", depending upon whether we see them in the northern or southern hemisphere. The electrical particles from the Sun-spots strike the upper regions of our atmosphere where the component gases (nitrogen, oxygen and extremely minor amounts of argon, helium, neon, hydrogen and carbon dioxide) are very much rarefied and cause them to vibrate and glow in colors characteristic of the various elements, just as a neon sign glows when an electric charge is passed through it. The Sun-spots that cause auroral displays also cause the magnetic storms that interfere with radio reception, telephone, telegraph and cable traffic and other electromagnetic devices such as compasses and various aviation accessories.

There is an almost infinite variety to the auroral display. The lights may sweep across the sky in waves, in streamers or in folds like draped curtains. Or it may be a stationary glow. Sometimes there is little or no color in these waves, sheets or streamers of light. At other times the lights may be rich in red or green or pastel shades. Rose color and lavender and violet and purple are common. Blue is rare but has been seen. The "Northern Lights" have been seen as far south as New Orleans and the Florida peninsula and the "Southern Lights" have been seen as far north as New Zealand and Australia, but the maximum occurrence of these auroral displays is along the borders of the Arctic and Antarctic regions. Since these are atmospheric displays, our atmosphere must extend to the extreme height at which auroral lights are observed. Prof. Carl Störmer of the University of Oslo found this to be about 600 miles. He further found that no auroral lights came closer to the Earth's surface than 50 or 60 miles.

The Change of Seasons

It is enough to state that the earth is nearer to the sun in January than it is in July to convince those who live in the northern hemisphere that there must be some other explanation than that for the seasonal changes on our globe. The reason for the change in seasons is that the axis of rotation of the earth is inclined to the perpendicular of the plane of its orbit around the sun at an angle of approximately $23\frac{1}{2}^\circ$, so there is a proportional shifting of the angle of the sun's rays falling on different portions of the earth's surface at different times of the year.

On or about June 21, the north end of the earth's axis is inclined to its limit toward the sun. In the northern hemisphere this is our summer solstice. We then have our longest daylight period and a maximum of heat and light from the sun, whose perpendicular rays are falling on the Tropic of Cancer, $23\frac{1}{2}^\circ$ north of the equator. Six months later, on or about Dec. 22, the earth has reached a position in its orbit that finds the north end of its axis inclined at its maximum away from the sun. This is our winter solstice. We then have our shortest daylight period and a minimum of heat and light from the sun, which is over the Tropic of Capricorn, $23\frac{1}{2}^\circ$ south of the equator. Conditions are reversed in the southern hemisphere for obvious reasons. Their winter is our summer; their summer is our winter. Twice a year, at the equinoxes in March and September, the sun is on the equator, the day is of equal length all over the world and each hemisphere receives the same amount of light and heat from the rays of the sun.

If the effect in the change of the angle of the sun's rays on the earth's surface were instantaneous, our coldest period would be at the winter solstice and our warmest period at the summer solstice, but because of the blanket of atmosphere

around the earth and the cumulative effect in the heating or cooling of the earth's surface, we have "the lag of the seasons", which brings our warmest and coldest periods some 5 or 6 weeks after the sun is "farthest north" or "farthest south".

Seasons for the Northern Hemisphere, 1958

Eastern Standard Time

March 20, 10:06 P.M., sun enters sign of Aries; spring begins.
 June 21, 4:57 P.M., sun enters sign of Cancer; summer begins.
 Sept. 23, 8:10 A.M., sun enters sign of Libra; autumn begins.
 Dec. 22, 3:40 A.M., sun enters sign of Capricornus; winter begins.

Planet Table

	Mean distance from sun in millions of miles	Period of revolution around the sun	Eccentricity of orbit	Inclination to ecliptic	Diameter	Period of rotation on axis	Inclination of equator to orbit plane	Surface gravity (earth = 1)	Oblateness	Mean velocity in orbit	Max. stellar mag.
				° ' "	miles		°			mi./sec.	
Sun.....					865,390	24 ^d .64†	7.2	28	0		-26.7
Moon.....		(27 ^d .322)*	0.05	5 8	2,159.9	27 ^d .322	6.7	0.16	0	0.63	-12.6
Mercury....	36.00	87 ^d .969	0.21	7 0	3,008.5	88 ^d	7	0.28	0	30	-1.2
Venus.....	67.27	224 ^d .701	0.01	3 24	7,575.4	† ‡	?	0.85	0	22	-4.4
Earth.....	93.00	365 ^d .256	0.02	0 0	7,926.7§	23 ^h 56 ^m	23.4	1.00	1/297	18.5	
Mars.....	141.71	1 ^y .881	0.09	1 51	4,215.6	24 ^h 37 ^m	25.2	0.38	1/192	15	-2.8
Jupiter....	483.88	11 ^y .862	0.05	1 18	88,698§	9 ^h 50 ^m †	3.1	2.6	1/15	8	-2.5
Saturn.....	887.14	29 ^y .458	0.06	2 29	75,060§	10 ^h 14 ^m †	26.8	1.1	1/9.5	6	-0.4
Uranus.....	1783.98	84 ^y .013	0.05	0 46	30,878	10 ³ / ₄ h	98	0.9	1/14	4	+5.7
Neptune....	2795.45	164 ^y .793	0.01	1 46	27,700	15 ^h .8	29	1.1	1/40	3	+7.8
Pluto.....	3675.27	248 ^y .430	0.25	17 9	3,600	??	??	??	??	<3	+14

* Period of revolution around the earth. † This is the rotation at the equator. ‡ Rotation of Venus is uncertain but is probably a few weeks. § The equatorial diameters of the earth, Jupiter, and Saturn are given; polar diameters are: earth, 7900.0 mi., Jupiter 82,789 mi., Saturn 67,170 mi.

SATELLITES. The number of known moons in the solar system is now as follows: for the earth 1; Mars 2; Jupiter 12; Saturn 9; Uranus 5; Neptune 2.
 OTHER DATA ON THE EARTH: Equatorial circumference, 24,902.4 mi.; total area, 196,949,970 sq. mi.; mass, 6.6 sextillion tons; mean diameter, 7,917.8 mi.

The Moon

Mars has 2 small satellites or moons, Jupiter has 12, Saturn 9, Uranus 5, and Neptune 2; but the earth has one comparatively large satellite, commonly called the moon. It is a globe 2,160 mi. in diameter with a surface deeply pitted by great craters. It has no atmosphere that astronomers can detect and shines only by reflected light of the sun. Though it seems very bright to us at "full moon," it reflects only about 7% of the light from the sun.

The orbit of the moon is elliptical, with the earth at one focus. The distance of the moon from the earth varies from 221,463 mi. (perigee) to 252,710 mi. (apogee), the average being 238,857 mi. The curious thing about the moon is that it revolves around the earth in 27 days, 7 hr., 43 min., 11.47 sec., and rotates on its axis in exactly the same time, which is why we always see the same side of the moon. Because of what are known as "librations in latitude and

longitude" and also a "diurnal libration," we do see "around the edge of the moon" at different times. In this manner a total of 59% of the moon's surface has been observed, but the other 41% never has been seen by the human eye.

Although the moon revolves around the earth in approximately 27½ days, it is, on the average, a matter of 29½ days (29 days, 12 hr., 44 min., 2.78 sec.) from one new moon to the other, because the earth is moving around the sun while the moon is moving around the earth and the "new moon" depends upon the relative positions of the 3 bodies.

If the planes of orbit of the earth and the moon coincided, there would be an eclipse of the moon at every "full moon" and an eclipse of the sun at every "new moon," but the 5° angle between the planes of orbit of the earth and the moon causes the moon on most of its revolutions to miss the earth's shadow and the moon's

Astronomical Constants

1 light-year	5,880,000,000,000 mi.
velocity of light	186,272 mi./sec.
astronomical unit or distance earth-to-sun	93,003,000 mi.
mean distance, earth to moon	238,860 mi.
general precession	50".26
obliquity of the ecliptic	23° 27' 8".26—0".4684(t—1900) *
equatorial radius of the earth	3963.34 statute mi.
polar radius of the earth	3949.99 statute mi.
earth's mean radius	3958.89 statute mi.
oblateness of the earth	$\frac{1}{297.0}$
equatorial horizontal parallax of the moon	57' 2".70
earth's mean velocity in orbit	18.5 mi./sec.
sidereal year	365 ^d .2564
tropical year	365 ^d .2422
sidereal month	27 ^d .3217
synodic month	29 ^d .5306
sidereal day	23 ^h 56 ^m 4 ^s .091 of mean-solar time
mean solar day	24 ^h 3 ^m 56 ^s .555 of sidereal time

* t refers to the year in question, for example 1958.

shadow on most trips to miss falling onto the earth.

The tidal effects of the moon are well known. The "spring tides" occur at the "full moon" and "new moon" and the "neap tides" at first quarter and last quarter.

Meteors and Meteorites

Meteorites are meteors that have come down to Earth. Meteors are masses of mineral or metal or both that plunge into the Earth's atmosphere at great speed and become incandescent from the resultant friction so that they are seen in the sky as "fireballs" (bolides) or "shooting stars". The "fireballs" are the larger, make a greater flash across the sky and sometimes explode. Meteors come in all sizes but most of them verge on the microscopic and burn up completely in the flash that makes them visible from 40 to 60 miles above the Earth's surface. Millions of them enter our atmosphere every twenty-four hours and probably not more than one or two a day survive to strike the ground as meteorites.

The largest meteorite ever found is located near Grootfontein, Southwest Africa, and its weight is estimated between 50 and 70 tons. The second largest meteorite (the Ahnighito, weight 34 tons) was found by Admiral Peary, Arctic explorer, at Cape York, Greenland, and is now on exhibition in the Hayden Planetarium, New York City. The largest meteorite found on United States soil is the Willamette (weight 15½ tons), which fell near Portland, Oreg., and is now in the American Museum of Natural History, New York City.

Craters produced by the fall of meteorites have been found in many countries. The first to be recognized and the largest known is Meteor Crater in Arizona, a depression about 4,000 feet in diameter, about 600 feet deep, and with exterior walls rising

150 feet above the surrounding plain. Meteor craters have been found near Odessa, Texas; Haviland, Kansas; in the Arabian Desert; in Central Australia and—a notable group of fifty or more—in the region of the Stony Tunguska River in northern Siberia.

Many meteors travel in swarms, believed in some cases to be disintegrated comets. The Perseid shower that occurs annually Aug. 10–14 is thought by some astronomers to be all that remains of Tuttle's Comet and the Leonid shower, which reaches a maximum in mid-November every 33 years, similarly is suspected of being what is left of Tempel's Comet. The Leonid shower of 1833 was the greatest meteor display of which astronomers have record.

Eclipses in 1958

(1) *Annular eclipse of the sun*, Apr. 18. The central path of the annular phase begins at sunrise in the Indian Ocean, south of India, and extends across Thailand and Formosa, and goes south of Japan, ending in the north Pacific Ocean at sunset. Partial phases are observable in eastern Asia, most of the islands of Australasia, and Alaska. The middle of the eclipse at Fairbanks, Alaska, occurs at 5:41 P.M., 165th-meridian standard time, with less than 0.2 of the sun obscured.

(2) *Partial eclipse of the moon*, May 3, visible in the western part of North America, the Pacific Ocean, eastern Asia, Australia, part of the Indian Ocean and Antarctica. The following are times of events, the magnitude of the eclipse being very small:

Moon enters penumbra	2:10 A.M. P.S.T.
Moon enters umbra	4:00 A.M.
Mid-eclipse	4:13 A.M.
Moon leaves umbra	4:26 A.M.
Moon leaves penumbra	6:16 A.M. P.S.T.

(3) *Total eclipse of the sun*, Oct. 12. The path of totality extends from a point in the South Pacific Ocean, considerably northeast of Australia, across the ocean to South America, where it ends at sunset near the coast of Chile. Only a few islands are in the path of totality, and except for New Zealand, little land is covered by the partial phases. At Tutuila, Samoan Islands, the eclipse is visible in the partial phase, about 0.9 of the sun being obscured.

Important Meteor Showers

Date	Meteor stream	Radiant in constellation
Jan. 1-4	Quadrantids.....	Boötes
Feb. 5-10	Alpha Aurigids.....	Auriga
Mar. 10-12	Zeta Boötids.....	Boötes
Apr. 19-23	Lyrids.....	Hercules
May 1-6	May Aquarids.....	Aquarius
May 30	Eta Pegasids.....	Pegasus
June 27-30	Pons-Winnecke meteors.....	Draco
July 14	Alpha Cygnids.....	Cygnus
July 26-31	Delta Aquarids.....	Aquarius
Aug. 10-14	Perselids.....	Cassiopeia
Aug. 10-20	Kappa Cygnids.....	Cygnus
Aug. 21-31	Zeta Draconids.....	Draco
Sept. 22	Alpha Aurigids.....	Auriga
Oct. 2	Quadrantids.....	Boötes
Oct. 9	Giacobinids.....	Draco
Oct. 18-23	Orionids.....	Orion
Nov. 14-18	Leonids.....	Leo
Dec. 10-13	Geminids.....	Gemini

The Atmosphere

The atmosphere of the Earth—the blanket of air that surrounds our globe and is essential to life—is of interest to astronomers because of its effect on the light that comes to us from heavenly bodies. Air has weight and volume. It refracts (bends or changes the direction of) light rays that enter it. Due to this refraction, we are able to see the Sun and the Moon before they rise and after they set. The “twinkling” of the stars is caused by convection currents in the air that have a rapidly changing refractive effect on the light from the stars. Our twilight is produced by the diffusion in the atmosphere of light from the Sun when it is below the horizon. Meteors become visible when they are heated to incandescence by friction with the atmosphere when, from outer space, they plunge into it at terrific speed.

Prof. Carl Störmer of the University of Oslo measured the height of the atmosphere and found it to be more than 600 miles, but about half of it by weight is below 18,000 feet. Although we may remark blandly that something is “as light as air,” the Earth’s atmosphere in bulk is of such enormous weight that at sea level it exerts a pressure of approximately 14.7 pounds per square inch. At higher levels, of course, the pressure is less.

Chemically, the atmosphere is composed of nitrogen (approximately 78 per cent by volume), oxygen (approximately 21 per cent by volume), and extremely minor amounts (about 1 per cent in all by volume) of argon, neon, helium, hydrogen and carbon dioxide. There is also present in the air a varying amount of water vapor, which is known as humidity and is distressing when the percentage is high in warm weather.

Projection Planetaria

Adler Planetarium, 900 E. Achsah Bond Drive, Chicago, Ill.
Director, Wagner Schlesinger.

Fels Planetarium, 20th St., Benjamin Franklin Pkwy., Philadelphia, Pa.
Director, I. M. Levitt.

Griffith Planetarium, Los Angeles, Calif.
Director, Dinsmore Alter.

Hayden Planetarium, 81st St., Central Park West, New York, N. Y.
General Manager, Joseph M. Chamberlain.

Buhl Planetarium, Federal and West Ohio Sts., Pittsburgh, Pa.
Director, Arthur L. Draper.

Morehead Planetarium, University of North Carolina, Chapel Hill, N. C.
Manager, A. Jenzano.

Morrison Planetarium, Golden Gate Park, San Francisco, Calif.
Manager, George W. Bunton.

Seymour Planetarium, Museum of Natural History, Springfield, Mass.
Director, Frank D. Korkosz.

Notable Telescopes of the World

Refractor Telescopes

Size in inches	Observatory	Location
40	Yerkes	Williams Bay, Wis.
36	Lick	Mt. Hamilton, Calif.
32.7	Paris (Univ. of)	Meudon, France
31.5	Astrophysical	Potsdam, Germany
30	Allegheny	Pittsburgh, Pa.
30	Bischoffsheim	Nice, France
30	Poukova	Leningrad, U.S.S.R.

Reflector Telescopes

200	Palomar	Palomar Mt., Calif.
100	Mt. Wilson	Pasadena, Calif.
82	McDonald	Mt. Locke, Texas
74	Dunlap	Richmond Hill, Ont.
72	Lord Ross (dismantled)	Parsonstown, Ireland
72	Dominion Astrophysical	Victoria, B. C.
69	Perkins	Delaware, Ohio
61	Harvard	Harvard, Mass.
60	Bloemfontein	Bloemfontein, U. of S. Af.
60	Mt. Wilson	Pasadena, Calif.
60	Córdoba	Bosque Alegre, Argentina

THE OTHER NATIONS OF THE WORLD



A GUIDE TO MAIN HISTORICAL, POLITICAL, ECONOMIC,
GEOGRAPHIC AND SOCIAL FACTS

Prepared by the Staff of ENCYCLOPAEDIA BRITANNICA

Under the direction of

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A record of later events may be found in the section: NEWS RECORD OF 1957.

Afghanistan (Kingdom)

Area: 250,966 square miles.*

Population (est. 1953): 13,000,000*

(Pushtu, 60.5%; Tajik, 30.7%; Uzbek, 5%;
Mongolian and others, 3.8%).

Density per square mile: 51.8.

Ruler: Mohammed Zaher Shah.

Prime Minister: Mohammed Daud Khan.

Principal cities (est. 1953): Kabul, 310,-
000 (capital); Kandahar, 195,000 (trading
center); Herat, 150,000 (farming center).

Monetary unit: Afghani.

Languages: Pushtu (official), Persian.

Religion: Mohammedan (Sunni, 90%;
Shiah, 10%).

* Unofficial estimate (no census ever taken).

HISTORY. Wedged between Pakistan, Iran and the U.S.S.R. in southwestern Asia without outlet to the sea, Afghanistan did not become an independent state until 1747. Previously, it had been either a cluster of small states under nominal Arab rule, part of Mongol or Mogul empires, or dismembered among India, Persia and the Uzbeks. By the 19th century it had passed into the British sphere of influence.

In 1880, Great Britain recognized Abdur Rahman Khan as Emir and gave him an annual subsidy of more than \$500,000 to delegate management of his foreign relations to Britain. His son, Habibullah, succeeded him in 1901 and kept Afghanistan neutral in World War I despite strong pressure of pro-Turkish elements.

On Aug. 8, 1919, a treaty was signed making Afghanistan free and independent of all British control. The country maintained strict neutrality in World War II, and was admitted to the United Nations in Nov. 1946. Relations with Pakistan have been strained by a dispute over areas

inhabited by the Pathans in the North West Frontier Province.

GOVERNMENT. Under the 1932 Constitution, Afghanistan is a constitutional monarchy, with authority vested in the sovereign and Parliament, which has a Senate of 50 members, who are named for life by the sovereign, and a National Assembly of 171 elected members. Executive power is exercised by the sovereign and Cabinet headed by the Prime Minister.

Military service is compulsory. The army strength is about 75,000, supplemented by tribal bands. There is a small air force.

SOCIAL AND ECONOMIC CONDITIONS. Education is nominally compulsory. Primary schools exist in many parts of the country, but secondary schools only in Kabul and provincial capitals. There were 210,000 pupils in 360 primary schools in 1955. There were also 32 secondary and vocational schools and a university at Kabul.

Only a fifth of the soil is under cultivation, the greater part of the country being mountainous and rocky. Farming is confined to the fertile valleys and plains, sometimes with the aid of irrigation. Two crops a year are usually grown. Important ones include fruits and nuts, castor beans, cereals, madder, tobacco, cotton and vegetables. Wheat is the staple food. The fat-tailed indigenous sheep is a principal source of meat and wearing apparel.

Industry is still in a primary stage of development. Manufactures include cotton and woolen textiles and clothing, soap, leather, matches, beet sugar and furniture.

Among the leading exports are karakul skins (mostly to the U.S.), cotton, wool, rugs, carpets, spices and dried fruits. Most

of the trade normally is carried on through Pakistan; wool and cotton are exported to the U.S.S.R. in return for consumers' goods. Exports in 1954 (excluding the U.S.S.R., Communist China and other people's republics) were about U. S. \$40,143,000; imports were \$25,343,000.

Afghanistan has no railways or navigable streams. Camels and pack horses are still used by the natives, but motor transport is of increasing importance. The principal trade routes lead south through the Khyber and Khojak Passes to Pakistan, and north to the Uzbek and Turkmen Soviet Socialist Republics. There are about 4,000 miles of roads suitable for motor transport.

Both mineral and forest resources are largely unexploited. There are deposits of beryllium, chromite, coal, copper, gold, iron ore, lapis lazuli, oil, silver and sulfur.

NATURAL FEATURES; CLIMATE. Afghanistan, approximately the size of Texas, is split east to west by the Hindu Kush range of the Himalayas, rising in the east to heights of 24,000 feet. Except in the southwest, most of the country is covered by high snow-capped mountains and deep valleys. The few passes are deep and narrow. The climate ranges from extremes of below zero to more than 100° in the north; however, it is not so extreme in the south, although snowfall is heavy all over the country in winter. Rainfall, chiefly in the spring, is relatively light.

Albania (People's Republic)

(Republika Popullore e Shqipërisë)

Area: 11,100 square miles.

Population (census 1955): 1,394,310 (Albanian 99.8%; others, .2%).

Density per square mile: 125.6.

Chairman of Presidium: Hadji Leshi.

Premier: Mehmet Shehu

Principal cities (est. 1949): Tirana, 80,000 (capital); Scutari, 30,000 (northern trading center); Koritsa, 28,000 (farming center).

Monetary unit: Lek.

Language: Albanian.

Religions (est. 1953): Moslem, 65%; Greek Orthodox, 23%; Roman Catholic, 11%; others, 1%.

HISTORY. A tiny, backward state approximately the size of Maryland, Albania has acquired considerable importance since World War II because of its close ties with the Soviet Union and its strategic location at the mouth of the Adriatic. After the fall of the Roman Empire, Albania became part of the Byzantine Empire and was successively invaded by Goths, Serbs and Bulgarians. From 1014 to 1204 it was again under Byzantine rule. An alliance of Albanian chieftains (1444-66) under Skanderbeg failed to halt the advance of the Turks,

and the country remained under at least nominal Turkish rule for more than four centuries, until it proclaimed its independence on Nov. 28, 1912.

During World War I Albania was variously occupied by Italian, Greek, French, Serb and Austro-Bulgarian forces. On Aug. 2, 1920, Italy recognized Albanian independence and evacuated the country. Ahmed Zogu, Premier in 1922-23, ousted the government of Mgr. Fan Noli in 1924 and became President of a newly constituted republic in 1925. Three years later, after concluding pacts which placed Albania in Italy's sphere of influence, Zogu proclaimed himself King Zog I.

In 1939, Italy occupied the country in a matter of days. During the Greco-Italian war of 1940-41, the Greek armies pushed the Italians back from the Albanian border and occupied a large part of southern Albania. When Germany attacked Greece and Yugoslavia in April 1941, however, the Greeks withdrew quickly, and the Axis occupation of Albania was complete.

Albania was free of the Axis yoke by the end of 1944, and a leftist provisional government under Colonel General Enver Hoxha was established. That regime was confirmed in power by subsequent elections and full Soviet recognition, although provisional British and U. S. recognition was withdrawn in 1946. Since then, Albania has collaborated closely with the Soviet Union. It was admitted to the U.N. in 1955.

GOVERNMENT. Under its 1945 Constitution, Albania has a typical Soviet government. Supreme power is vested in the popularly elected National Assembly, to which the Cabinet, headed by the Premier, is responsible. The army, estimated at 30,000 men, has liaison with the U.S.S.R.

SOCIAL AND ECONOMIC CONDITIONS. Primary education is nominally compulsory, but illiteracy is high, especially among women. There is a teachers' college at Tirana.

Albania is still a primitive country where each family tries to provide most of its own needs. Nearly the whole population is engaged in combined farming and stock-raising. Only a small portion of the central part is fit for tilling. Corn is the chief crop. Others are wheat, tobacco, oats, barley, rye, spelt, olives and citrus fruit. Factories produce food products, cement and textiles; a large dam and power station was completed near Tirana in 1950.

Albania's postwar trade has been limited for the most part to the Soviet bloc. Important exports include crude oil, copper and chrome ore.

Railway mileage totaled only about 81 in 1951, linking Durazzo with Tirana and Elbasan. Good highways were developed by the Italians for strategic purposes, and the

Russians continued such construction. The only fully equipped port is Durazzo.

Mineral wealth, thought to be considerable, is relatively unexploited. The principal mineral is petroleum (production 1955: about 1,900,000 bbl.). Others include asphalt, bitumen, bauxite, chromite, copper, lignite and pyrites.

NATURAL FEATURES; CLIMATE. Albania is a mountainous state, largely over 3,000 ft. above sea level, with a narrow marshy coastal plain crossed by several rivers. The interior mountain plateaus and basins contain the centers of population.

The climate is typically Mediterranean, with dry, hot summers and moderate winters. Inland temperatures are lower than those on the coast.

Arabia

The Arabian peninsula is at the southwestern extremity of Asia. Its rich oil deposits and proximity to Palestine gave it special importance after World War II. Once a political unit, today it consists of the kingdoms of Saudi Arabia and Yemen, the British colony of Aden and six British protectorates.

The peninsula, with an area more than three times that of Texas, and an extreme length of 1,400 miles, is generally a plateau sloping gently eastward from a mountain range that averages 5,000 feet in elevation and runs along its entire west side within ten or fifteen miles of the Red Sea. The range reaches a maximum of 12,336 feet in Yemen to the southwest. Arabia has no rivers and no forests and is principally a desert dotted with many oases.

Most of the peninsula, particularly the interior, has a hot desert climate with frequent changes in temperature. The highlands of the Yemen and southwestern Saudi Arabia, however, together with parts of Oman, have a temperate climate. Jidda, on the Red Sea, has an average daily high temperature of 93° during August. Rainfall is almost nonexistent, amounting at Aden to less than two inches annually.

Mohammed united all Arabs in the 7th century A.D., and his followers, led by the caliphs, founded a great empire with its capital at Medina. Later, the caliphate capital was transferred to Damascus and then Baghdad, but Arabia retained its importance because of the holy cities of Mecca and Medina. In the 16th and 17th centuries, the Turks established at least nominal rule over much of Arabia, and in the middle of the 18th century it was divided into separate principalities.

Through agreements with local rulers, the British extended their rule over the southern and eastern coasts in the 19th century. At the same time, the Wahhabis,

a religious sect advocating strict adherence to Mohammed's teachings, gained control over most of central and eastern Arabia, and their work was the beginning of the present Saudi Arabia.

POLITICAL DIVISIONS OF ARABIA

Name	Area (sq. mi.)	Population (est. 1955)
Aden colony (British)	108	138,441†
Aden protectorate*	112,000	800,000
Bahrein Islands		
(Sultanate)*	231	120,000
Kuwait (Sheikdom)*	8,000	200,000‡
Oman and Masqat		
(Sultanate)*	82,000	550,000
Qatar (Sheikdom)*	8,500	35,000
Saudi Arabia		
(Kingdom)	617,760	7,000,000‡
Trucial Coast (Sheikdoms)*	5,792	80,000
Yemen (Kingdom)	75,290	4,500,000

* British protectorate. † 1955 census. ‡ Estimate 1952. § Estimate 1954.

Aden and Bahrein Islands. See British Commonwealth: Asia

Kuwait (Sheikdom)

Kuwait, on the northwestern shore of the Persian Gulf, is an independent state ruled by Sheik Abdullah as-Salim as-Subah. British protection, first exercised in 1898, has several times prevented it from being absorbed by Saudi Arabia. The territory surrounding Al Kuwait, its port, is largely desert; its trade consists of exchanging Arab goods from the interior for textiles, rice, sugar and other necessities. Kuwait's petroleum reserves, estimated at 9 billion barrels, are under concession to the Kuwait Oil Co. Ltd. (owned jointly by Gulf Oil Corp. and British Petroleum Co. Ltd.), which pays one-half its profits to the Sheik. Production, which began only in 1945, totaled 400,468,382 barrels in 1956. Production is concentrated at the Burgan field, from which petroleum is piped to the new port of Ahmadi for shipment.

South of Kuwait on the Persian Gulf is the Saudi Arabian-Kuwait neutral zone, which under the Treaty of Uqair (1922) belongs in undivided one-half interest to Kuwait and Saudi Arabia. It consists of about 2,000 sq. mi. of uninhabited desert. Oil was discovered in 1953 by American Independent Oil Co. Production totalled 11,724,585 barrels in 1956.

Oman and Masqat (Sultanate)

Occupying the mountainous southeastern part of the peninsula, Oman is nominally an independent state under the rule of Sultan Sayyid Sa'id bin Taimur. It has been under British protection since the 19th century. The state is best known for its date cultivation, and its riding camels are considered the best in the world. Trade

is mainly to and from India. The capital is Masqat (population 1954: 5,500).

Qatar (Sheikdom)

Qatar occupies the whole of the Qatar peninsula in the Persian Gulf. It is ruled, under British protection, by Sheik Ali bin Abdullah al-Thani. The whole area is claimed by Saudi Arabia. Oil deposits are being exploited by a subsidiary of the Iraq Petroleum Co.; output in 1956 was about 45,147,600 barrels.

Saudi Arabia. See page 703.

Trucial Coast (Sheikdoms)

This area, extending along part of the Gulf of Oman and the southern coast of the Persian Gulf, is ruled by 7 semi-independent sheiks. Treaties signed with Britain in 1853 and 1892 provided that the sheiks should not cede or sell any part of their land to any other power.

Yemen. See page 725.

Argentina (Republic)

(República Argentina)

Area: 1,084,359 square miles.

Population (est. 1956): 19,470,000 (approximately 97% of European descent, chiefly Spanish and Italian; 3% Indian and other).

Density per square mile: 18.0.

President: Pedro E. Aramburu.

Principal cities (est. 1955): Buenos Aires, 3,555,000 (capital and chief port); (est. 1950) Rosario, 467,937 (flour milling); Córdoba, 369,886 (northwest farming center); Avellaneda, 278,621 (industrial suburb of Buenos Aires); La Plata, 207,031 (seaport, meat packing); Lanús, 244,473 (suburb of Buenos Aires).

Monetary unit: Peso.

Languages: Spanish (official), Italian.

Religions (census 1947): Roman Catholic, 92.7%; Protestant, 1.9%; Jewish, 1.6%; others and unknown, 3.8%.

HISTORY. Discovered in 1516 by Juan Díaz de Solís, Argentina developed slowly under Spanish colonial rule. Buenos Aires was settled permanently in 1580 and became a prosperous city; the cattle industry of the Argentine pampas was thriving as early as 1600.

Invading British forces were expelled in 1806-07, and when Napoleon conquered Spain, the Argentinians set up their own government in the name of the Spanish King in 1810. On July 9, 1816, independence was formally declared. Internal dissension, particularly between Buenos Aires and the provinces, was put down under the dictator Juan Manuel de Rosas, who brought about unification from 1829 to 1852. Rosas was

overthrown by Justo José de Urquiza, who became the first President under the 1853 Constitution, modeled after that of the U. S.

President Hipólito Irigoyen (1916-22) refused to abandon Argentinian neutrality in World War I. Re-elected in 1928, Irigoyen, a radical, was ousted two years later by a conservative revolution led by General José Uriburu. The latter's successor, General Agustín Justo (1932-38) followed a moderate policy and undertook a large public works program.

Argentina proclaimed neutrality at the outbreak of World War II, but in general co-operated in hemispheric defense programs. In the closing months of the war, the nation declared war on the Axis (March 27, 1945) and signed the Act of Chapultepec the following April 4. Diplomatic recognition and admission to the U. N. followed. Juan D. Perón, then an army colonel, emerged as strongman and won the 1946 presidential elections. Congress became completely controlled by Perón supporters. Perón was re-elected Nov. 11, 1951.

Long-smouldering opposition, fanned by worsening relations with the Catholic Church, finally resulted in Perón's overthrow in Sept. 1955 in a coup led by the armed forces. Maj. Gen. Eduardo Lonardi became provisional President on Sept. 23; he was replaced by Maj. Gen. Pedro E. Aramburu on Nov. 13. Perón fled to exile and his party as well as Congress was dissolved. The provisional regime was beset by severe economic difficulties and counter-revolutionary activity.

GOVERNMENT; DEFENSE. Argentina is a federal union of 22 provinces and the federal district. Under the Constitution of 1853 (restored by decree on May 1, 1956), the President and Vice President are elected every 6 years by electors who are chosen by direct vote. The President appoints his Cabinet. The Vice President presides over the Senate but has no other powers. Neither is eligible for immediate re-election. The Congress has two houses—a 46-member Senate elected by the provincial legislatures for 9-year terms and a Chamber of Deputies popularly elected for 4-year terms.

Each province has its own constitution, elected governor, legislature and judiciary, but the President may in a crisis take over the local government.

Under legislation enacted Nov. 29, 1946, all men and women 12 to 50 are subject to military service at the President's discretion. Service from 20 to 22 is compulsory. Active strength of the army is about 100,000 officers and men.

The air force has about 150 combat planes. The navy in 1956 included two

modernized battleships, five light cruisers, 15 fleet destroyers and 9 frigates and escort vessels.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Argentina's estimated illiteracy rate of 7-10 per cent is the lowest in all Latin America. Education is free, secular and compulsory between six and fourteen. In 1951 there were 15,874 primary schools with 2,446,138 pupils, 3,264 public and private secondary, normal and special schools with 521,132 students and 6 national universities with 90,201 students.

Agriculture. A farming and stock-raising nation, Argentina devotes some 40% of its area to pasture and 10% to cultivation. Cotton, sugar cane and fruits are important, and Argentina is the world's largest producer of yerba maté (Paraguay tea), the national beverage. The 1956 wine production (preliminary) was 354,300,000 gallons (1951-55 average: 412,000,000 gallons).

Estimated crop production in the 1955-56 crop year, in metric tons, was as follows: wheat, 5,250,000; rye, 653,000; barley, 951,000; oats, 732,000; maize, 3,870,000; rice, 174,000; linseed, 231,000.

Cattle raising predominates on the pampas, especially in Buenos Aires province. Sheep raising is more important in Patagonia. In 1956 there were 49,028,000 cattle, 47,371,000 sheep, 3,858,000 pigs; 7,265,000 horses (1951). Wool production in 1955 was about 355,000,000 lb., greasy basis.

Manufacturing. Industrial expansion was accelerated during World War II by the shortage of imports, but industry is still closely allied to agriculture. The principal industry is meat packing, followed by flour milling, textiles, sugar refining, dairy products, quebracho extraction and wine. Jeep production was started in 1956 and a steel plant is under construction at San Nicolas.

Trade. Statistics are as follows (in millions of U. S. dollars):

	1954*	1955*	1956*
Exports	1,079.4	928.1	910.9
Imports	954.8	1,172.5	1,113.3

* Provisional.

Leading exports in 1956 were cereals and linseed (31%), meat (26%), wool (13%) and hides (7%); leading imports, machinery and vehicles (23%), fuel and lubricants (12%) and iron and steel and manufactures (8%). Leading customers were the United Kingdom (23%), the U. S. (12%), Germany (12%) and Italy (6%); leading suppliers, the U. S. (20%), Germany (10%), Brazil (7%) and Venezuela (7%).

Communications. According to *Lloyd's Register*, the merchant fleet on June 30, 1956, was composed of 364 steamers and motorships (100 tons and over) aggregating 1,049,869 gross tons. Chief Argentine ports

are Buenos Aires, second only to New York in the western hemisphere, and La Plata, both on the Plata estuary; and Rosario, a port on the Paraná River.

Railway mileage is about 27,000, nearly all of which radiates outward from Buenos Aires. With the purchase in 1947-48 of the British- and French-owned railways, the system became government-owned. It is badly in need of repair and rehabilitation. Highway mileage is upwards of 300,000, largely unimproved. The air transport system is government-owned; domestic air routes extend as far south as Tierra del Fuego. Direct connections with the rest of the world are maintained by international airlines.

FINANCE. The preliminary 1957 budget projected total government expenditure at 31,300,000,000 pesos, but did not provide for anticipated operating deficits in the government transportation systems. The net public debt on Dec. 31, 1954, was 41,684,000,000 pesos; this figure did not include the debt of official agencies and of provincial and municipal governments.

NATURAL FEATURES AND RESOURCES. Second in South America to Brazil in size and population, Argentina is about 2,070 miles long and 860 miles wide at the maximum. In general, it is a plain, rising from the Atlantic to the Chilean border and the towering Andes peaks, including Aconcagua, 22,835 feet, the highest peak in the world outside Asia. The northern area of the Argentine plain is the swampy and partly wooded Gran Chaco. South of that to the Río Negro are the rolling, fertile pampas, rich for agriculture and grazing, and supporting most of Argentina's population. Next southward is Patagonia, a region of cool, arid steppes with some wooded and fertile sections. The eastern part of Tierra del Fuego, the island southern tip of South America, belongs to Argentina.

The three great rivers which make up the Plata system—the Paraná, Paraguay and Uruguay—are important commercial arteries in northern Argentina. Rosario and Santa Fé, 260 and 360 miles respectively above Buenos Aires on the Paraná, are accessible to ocean vessels.

Minerals. Argentina must import most of nearly every mineral it uses. Oil is produced in Patagonia (1956: 31,080,000 barrels), and there is small mining of coal, tungsten, lead, gold, zinc, tin, silver and beryllium. The government announced discovery of uranium deposits in Feb., 1947. Imports of fuels and lubricants totaled 9,993,900 metric tons in 1956.

Forests. The Gran Chaco area is the world's chief source of quebracho extract. Total exports of this tanning agent obtained from quebracho logs in 1954 were

153,000 metric tons, part of which was re-exported from Paraguay. Other forest products—hardwoods, dyewoods, lignum vitae, red quebracho, medicinal gums and other tannins—are consumed locally for the most part.

CLIMATE. Except for the northern Gran Chaco, which has mild winters and torrid summers, Argentina lies in the south temperate zone. The pampas region has an average temperature of 60°, and freezing is rare. Temperature extremes increase progressively southward. All over Argentina, January is the warmest month and June and July are coolest. At Buenos Aires, the mean annual temperature in January-February is about 73°; in June-July, 50°. The heaviest rainfall, over sixty inches a year, hits the Gran Chaco, while on the pampas it ranges from twenty inches in the west to forty in the northeast; at Buenos Aires it is 37.2 inches.

Austria (Republic) (Republik Österreich)

Area: 32,374 square miles.

Population (est. 1956): 6,983,000 (practically all Austrian).

Density per square mile: 215.7.

President: Dr. Adolf Schärf.

Chancellor: Julius Raab.

Principal cities (census 1951): Vienna, 1,766,102 (capital, industrial center); Graz, 226,453 (industrial center); Linz, 184,685 (industrial center); Salzburg, 102,927 (tourist center); Innsbruck, 95,055 (tourist center).

Monetary unit: Schilling.

Language: German.

Religions (census 1951): Roman Catholic, 89%; Protestant, 6%; others, 5%.

HISTORY. The history of Austria before World War I was largely that of the Austro-Hungarian Empire and the Hapsburgs. Its origin was in the province of Ostmark, separated from Bavaria and given to Leopold of Babenberg (A.D. 976) by the Holy Roman Emperor, Otto II. It was ruled by the Babenbergs until 1246, and later passed to Ottakar of Bohemia, who lost it to Rudolf of Hapsburg (1276). In 1437, the three kingdoms of Austria, Hungary and Bohemia were united under the rule of Albert V. For three centuries thereafter, despite almost constant warfare, the states remained for the most part under a single crown. The Hapsburgs gradually added to their possessions, until Charles V, during the 16th century, ruled a vast part of Europe. Emperor Francis I laid down the Holy Roman crown in 1806 at the height of the Napoleonic Wars, in which Austria and its allies were finally victorious. Influence in Germany was lost through defeat by Prussia in the Seven Weeks' War (1866). In 1867, the Dual Monarchy of Austria and Hungary was established,

united in the person of the sovereign, Franz Josef I, who ruled until 1916.

Following the defeat of the Central Powers in World War I, the republic of Austria was established in Nov. 1918. It was confined to its present borders by the Treaties of St. Germain (1919) and Trianon (1920). The years immediately following the war were a period of privation, dissension and riots, with Austrian currency becoming worthless and the nation bankrupt. Establishment of a semidictatorship by Engelbert Dollfuss, who had become Chancellor in 1932, was followed by an unsuccessful Socialist revolt (Feb. 1934) and an attempted Nazi *coup d'état*, which failed, although Dollfuss was killed. He was succeeded by Kurt von Schuschnigg, whose futile efforts to maintain Austria's independence ended (March 12, 1938) with the bloodless occupation of Austria by Germany. Hitler proclaimed the *Anschluss* of Germany and Austria the next day.

Following the liberation of Vienna (April 13, 1945), Dr. Karl Renner, veteran Socialist, formed a provisional government. Elections held Nov. 25, 1945, were won by the People's party, whose leader, Leopold Figl, became Chancellor. Dr. Renner was elected President of the Second Austrian Republic (Dec. 20, 1945). Upon his death (Dec. 31, 1950) Dr. Theodor Koerner was elected President and on the latter's death (Jan. 4, 1957) Dr. Adolf Schärf was elected (May 5, 1957); both were Socialists.

Julius Raab of the People's party headed coalition cabinets after the elections of 1953 and 1956.

After World War II, Austria within its 1937 frontiers was divided into 4 national zones, as was the city of Vienna. The 4 occupying powers (the U. S., the U.S.S.R., Britain and France) exercised control through the Allied Council for Austria.

Austria finally regained its independence on May 15, 1955, when a state treaty was signed with the 4 occupying powers. The U.S.S.R. exacted substantial economic concessions as the price for its consent; they included the delivery of 10,000,000 tons of oil over a 10-year period as well as the delivery of \$150,000,000 worth of goods over a 6-year period. Austria was admitted to the U.N. in 1955.

NATIONAL GOVERNMENT. Austria is a federal republic comprised of nine provinces (including Vienna), each of which has its own elected assembly for the control of regional affairs. The federal Parliament consists of two houses—the *Bundesrat* whose 50 members are chosen by the provincial assemblies and the *Nationalrat* whose 165 members are chosen by national election. The President of the republic is elected by national popular vote for a term of six years. The government is administered by the Chancellor

and his Cabinet. Party standing in the *Nationalrat* after the elections of May 13, 1956, was: People's party 82, Socialist 75, Independent 5, Communist 3.

SOCIAL AND ECONOMIC CONDITIONS. In 1955-56 Austria had 5,352 primary schools with 764,217 pupils, 300 secondary, vocational and teachers' training schools with 115,746 pupils, and 14 institutions of higher learning, including 4 universities, with 21,093 students. Illiteracy is practically unknown.

Agriculture employs approximately one-third of the population but the country is heavily dependent on imported food-stuffs. Mixed farming predominates. Rye and wheat are the leading cereals. Recent production figures (in metric tons):

	1954	1955	1956*
Wheat	451,832	549,186	570,500
Rye	369,973	416,107	434,000
Oats	334,264	363,704	374,400
Barley	311,537	345,738	384,500
Potatoes	2,791,627	3,005,356	3,229,000
Bett sugar	1,844,625	1,438,902	1,330,000

* Preliminary.

Stock raising and dairy farming both in the Alpine pastures and the lowlands of the east are of importance.

Austria is primarily an industrial country, with 41% of the population engaged in industry. Most important are the metallurgical, engineering, textile and food processing industries. Medium- and small-sized firms with specialized lines predominate, although a few large enterprises exist. Nationalized plants employ about one-fifth of the industrial labor force. The major steel and aluminum plants are in Upper Austria. Production (1956) included pig iron, 1,736,676 metric tons; steel, 2,077,548 tons; aluminum, 70,764 tons.

Trade statistics are as follows (in millions of schillings):

	1954	1955	1956
Exports	15,852	18,169	22,080
Imports*	16,478	23,013	25,080

* Commercial.

Leading exports in 1956 were iron and steel and other metals (23%), timber (21%) and machinery, electrical equipment and vehicles (13%); leading imports, machinery, electrical equipment and vehicles (20%), food (15%) and mineral fuels (14%). Leading customers were western Germany (24%), Italy (15%), Switzerland (6%) and the United Kingdom (5%); leading suppliers, western Germany (35%), the U. S. (13%), Italy (8%) and the United Kingdom (8%).

There were 3,750 miles of railway in 1954, partly electrified. Water traffic is restricted for the most part to the Danube River. The major river ports are Linz and, especially, Vienna, which is also an important rail, road and air center.

Recent government financial data are as follows (in millions of schillings):

	1955	1956*	1957*
Revenue	27,482	33,903	31,812
Expenditure	26,780	31,410	30,952

* Budget estimate.

The postwar public debt totaled 13,670,600,000 schillings in 1954.

NATURAL FEATURES AND RESOURCES; CLIMATE. Austria covers an area about equal to that of Scotland and includes much of the mountainous territory of the eastern Alps (about 92.3 per cent of the country is classified as mountainous). The country contains many snow-fields, glaciers and snow-capped peaks. The principal river is the Danube. Forests and woodlands cover about 40%.

Austria possesses valuable mineral resources. In Styria lies one of the largest European deposits of iron ore. Copper is mined in Salzburg, Tyrol and lower Austria, and lead and zinc in Carinthia. Other minerals include bauxite, graphite, sulfur and manganese. Fuel resources comprise small coal deposits in lower Austria and large quantities of lignite, found everywhere except in Salzburg. Large supplies of coal and coke must be imported, but extensive water power resources are available for exploitation. Petroleum fields in the Zistersdorf and Mühlberg areas, both in eastern Austria, produced an estimated 23,220,000 barrels in 1956. Production of lignite in 1956 was 6,729,816 metric tons; coal, 165,600 tons; iron ore (metal content 30%), 2,252,000 tons.

Variety is the keynote of Austria's climate. The mean annual temperature in the north ranges between 45° and 48°, and in no month does the average exceed 68°. Rainfall amounts to about 40 in. annually. In the Tyrol, mild winters and warm summers are customary.

Belgium (Kingdom)

(Royaume de Belgique—
Koninkrijk België)

Area: 11,779 square miles.*

Population (est. Dec. 31, 1956): 8,951,443 (Wallon, Flemish).

Density per square mile: 759.9.

Sovereign: Baudouin I.

Premier: Achille van Acker.

Principal cities (est. 1956, including certain suburbs): Brussels, 985,793 (capital); Antwerp, 611,035 (port and commercial center); Liège, 445,378 (iron and steel); Charleroi, 281,541 (industrial center); Ghent, 229,937 (textiles).

Monetary unit: Belgian franc.

Languages (est. 1954): Flemish, 50%; French, 34%; Flemish and French, 15%; German, 1%.

Religion: Predominantly Roman Catholic.

* Including areas taken over from Germany in 1949.

HISTORY. In 1914 and again in 1940, Belgium was crushed by German armies because its position in the Low Country area made it a highway on the invasion route to France. Highly industrial, a bit larger than Maryland and second most densely populated major European nation, Belgium emerged from World War II in fair economic condition; but, politically, the country suffered crisis after crisis in the struggle between conservatives and elements of the left, especially over the return of King Leopold III to the throne. Leopold returned to Belgium on July 22, 1950, but violent Socialist-led rioting forced him to agree to turn over his powers to his son, Baudouin. He formally abdicated July 16, 1951, and his son (born Sept. 7, 1930) became King as Baudouin I.

Perhaps the earliest mention of the Belgians in history was in 57-50 B.C., when they were conquered by Julius Caesar. In the Middle Ages the Belgian towns became wealthy and virtually autonomous as great textile centers. Belgium became part of Burgundy in 1385 and, later, part of the Spanish domains of Charles V. By the Treaty of Utrecht, in 1713, Belgium went to Austria, though retaining its autonomy, and from 1792 to 1815 it held a similar status under France. United with the Kingdom of the Netherlands by the Congress of Vienna in 1815, the Belgians revolted and proclaimed independence on Oct. 4, 1830, choosing as their sovereign Leopold of Saxe-Coburg. Taking the title of King Leopold I, he ruled 1831-65.

Belgium progressed peacefully under Leopold I and his son, Leopold II, who reigned from 1865 to 1909, and was succeeded by his nephew, Albert I (1909-34).

Despite heroic Belgian resistance under the personal leadership of Albert, the country was overrun by the Germans in 1914 and occupied throughout World War I. The treaty of 1919 gave Belgium the regions of Moresnet, Eupen and Malmédy, and a mandate over Ruanda-Urundi.

The Germans overran the country again in May 1940 with little difficulty, and Leopold III, who had succeeded his father on the latter's accidental death in 1934, surrendered unconditionally. He was taken prisoner, but a government-in-exile was set up in London; it returned to Belgium in Sept. 1944. In Leopold's absence his brother, Prince Charles, was elected Regent on Sept. 20, 1944, and held that post until Leopold returned to Belgium in 1950.

Economically, Belgium made more rapid progress than the rest of Europe in the immediate postwar years. Politically, however, controversy over the return of Leopold made matters difficult for postwar cabinets, composed for the most part of Christian Socialist and Liberal members.

In elections held June 4, 1950, the

Christian Socialists won control of the Chamber of Deputies; succeeding Christian Socialist Cabinets were headed by Jean Duvieusart (June 8), Joseph Pholien (Aug. 15) and Jean van Houtte (Jan. 15, 1952). The Christian Socialists lost their majority in the parliamentary elections of April 1954, and Socialist Achille van Acker formed a Socialist-Liberal Cabinet on April 22, 1954.

On March 17, 1948, Belgium signed a 50-year defense treaty with Britain, France, Luxemburg and the Netherlands; and in April 1949, the nation joined the North Atlantic alliance.

GOVERNMENT AND DEFENSE. Under the 1831 Constitution, Belgium is a constitutional monarchy. The ministers who constitute the Cabinet must have the confidence of Parliament, which consists of a 212-member Chamber of Deputies popularly elected and a Senate of varying membership, elected both directly and indirectly. All members serve for four years unless one or both houses are dissolved by the King, in which case new elections must be held in forty days. Belgium's nine provinces and 2,666 communes have Crown-appointed officials but retain considerable autonomy with their locally elected councils.

The election of Apr. 11, 1954, returned 95 Christian Socialists (as against 108 in the June 1950 election), 86 Socialists (77), 25 Liberals (20), 4 Communists (7) and 2 others to the Chamber of Deputies.

The authorized strength of the armed forces in 1957 was 145,300, of which 115,100 were in the army. The Belgian air force has about 350 combat planes. The navy, abolished in 1928, was reformed after World War II and in 1956 had 1 frigate, 6 ocean and 26 coastal minesweepers, 1 auxiliary transport and various other minor craft.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Education, free and universal for children from six to fourteen, is under state control in three divisions: primary, intermediate and higher. Primary schools (Oct. 1953) numbered 8,745 with 826,328 pupils; secondary schools (1952), 774 with 140,047 students; technical schools, 1,513 with 176,766 students. There are four universities: official, Ghent and Liège; unofficial (private), Brussels and Louvain with a total of 17,879 students in 1953-54. There are also private schools, many under religious auspices. The rate of illiteracy in 1947 (7 years of age and over) was 3%. **Agriculture.** About 60% of the total area of Belgium is under cultivation, and one-half the farmed area is devoted to forage crops. Recent production figures for the country are as follows (in thousands of metric tons):

	1948-52	1954	1955	1956*
Wheat	525	589	731	597
Oats	483	452	481	484
Barley	244	247	280	288
Rye	222	245	220	196
Sugar beets	2,135	2,132	2,246	2,204
Potatoes	2,127	2,634	2,184	2,034

* Provisional.

Other crops are fodder beets, flax and fruit. The pastoral industry, especially dairy farming, flourishes. On Jan. 1, 1957, Belgium had 2,254,924 cattle, 1,276,437 hogs, 175,003 horses and 37,540 sheep.

Manufacturing. Belgium is one of the most highly industrialized nations in Europe, largely because of vast, readily accessible coal reserves. Industry chiefly processes imported raw materials for re-export in semifinished or finished form. Of primary importance are iron and steel, nonferrous metals, fabricated metal products and textiles. Steel production totaled 6,382,000 metric tons in 1956; pig iron, 5,761,000 tons. Associated with iron and steel is a considerable engineering industry, shipbuilding in Antwerp, and machinery and railway stock in Brussels. The centuries-old textile industry produces linen (Courtrai); cotton (the southeast); and synthetic fibers. Antwerp, using the output of mines in the Congo and Angola, rivals Amsterdam in diamond cutting.

Foreign trade is especially vital to the Belgian economy. The Belgian-Dutch-Luxembourg customs union (Benelux), established on Jan. 1, 1948, is one of the five great trading areas in the world. Trade of Belgium and Luxembourg (in billions of francs) is as follows:

	1954	1955	1956*
Exports	115.0	138.8	158.1
Imports	126.7	141.5	163.6

* Provisional.

Chief customers in 1956 were the Netherlands (22%), France (11%), western Germany (10%), the U. S. (10%) and Britain (6%). Leading sources of imports were western Germany (15%), the Netherlands (13%), the U. S. (12%), France (12%) and Britain (8%). Chief exports were iron and steel and products (28%), thread and fabric (7%), coal, coke and petroleum and products (6%), copper and products (5%) and precious stones and metals (5%).

Communications. Inland transportation facilities are highly developed. Railroad mileage is 3,127. Inland waterways total 983 mi., including the well-developed canal system; in 1955, rivers and canals carried 56,850,000 metric tons of freight. The highway system comprises 6,200 mi. of major roads, generally of good quality. The merchant fleet on June 30, 1956, totaled 192 ships (100 tons and over) aggregating 539,829 gross tons, according to *Lloyd's Register*. Sabena, the government-controlled

airline, flew 31,906,448 kilometers and carried 526,594 passengers in 1956.

Finance. Recent data are as follows (in billions of francs):

	1955*	1956†	1957‡
Revenue	90.4	85.4	89.9
Expenditure	95.3	105.4	102.4

* Provisional. † Revised budget estimate. ‡ Preliminary budget estimate.

The national debt, consolidated, short and middle term and at sight, totaled 339,220,461,571 fr. on Dec. 31, 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. The northern third of Belgium is a plain extending eastward from the coast of the North Sea. North of the Sambre-Meuse Rivers is a low plateau, varying from 250 to more than 600 feet in height, and to the south lies the Ardennes plateau, rising to a maximum of about 2,300 feet. The shallowness of the North Sea off Belgium precludes the development of good harbors; some of the port advantages of Antwerp, on the Schelde River, are offset by the fact that the approaches to it are through Dutch territory.

The principal mineral is coal; production in 1956 was 29,555,000 metric tons. The Ardennes coalfield, now nearly exhausted, extends southward into France. The Campine field lies in the northeast.

Forests cover about 20% of Belgium, but their products are relatively unimportant. Fishing is of little economic importance.

The climate is temperate. Ostend, on the sea, has an average annual temperature of 49° and annual rainfall of 27.5 inches, about like that of Chicago. Baraque Michel, in the Ardennes heights, has an average temperature of 43°, rainfall of 59.5 inches, and considerable snow in the winter.

BELGIAN COLONIAL EMPIRE

Country	Area (sq. mi.)	Population
Belgian Congo (colony)	904,991	12,956,950*
Ruanda-Urundi (U. N. trust terr.)	20,742	4,402,577†

* Dec. 31, 1956. † Dec. 31, 1955.

BELGIAN CONGO—Status: Colony.

Capital: Léopoldville (population Dec. 31, 1954: 299,806; Europeans, 16,887).

Governor General: Léo Pétillon.

Monetary unit: Congolese franc.

Foreign trade (1956)*: exports, 27,379,881,000 fr. (53% to Belgium, 14% to the U. S.); imports, 20,658,187,000 fr. (35% from Belgium, 20% from the U. S.). Chief exports: copper (40%), coffee (8%), cotton (7%), palm oil (5%), diamonds (5%).

Agricultural exports (1956, in metric tons)*: coffee, 52,045; cotton, 52,523.

Mineral exports (1956, in metric tons)*: copper (smelter), 253,748; tin (ingots), 2,717; cassiterite, 16,419; diamonds (mainly industrial), 13,445,866 carats; gold (refined), 370,000 oz.; cobalt, 4,639; zinc, 40,766; uranium.

Forest exports (1956, in metric tons)*: palm oil, 152,247; palm kernels, 35,496; rubber, 32,027; gum copal, 4,950.

* Including Ruanda-Urundi.

The mineral-rich Belgian Congo, in central Africa, with a narrow outlet to the Atlantic through the northwestern tip of Portuguese Angola, was acquired Nov. 15, 1908, by the Belgian state from the Belgian King, Leopold II. The latter had backed exploration of the area by the English explorer, H. M. Stanley, and in 1885 had been recognized by the great powers as personal sovereign and proprietor of the Congo Free State, as it was then called. The area is now administered by a Governor General responsible to the Cabinet minister for the colonies. The Governor General has unrestricted executive and legislative powers, and the colony has no representative institutions of its own. During World War II it furnished vital war materials to the Allies. The European population on Dec. 31, 1956, was 107,413, of whom 84,444 were Belgians.

RUANDA-URUNDI—Status: U. N. trust territory, united administratively with the Belgian Congo.

Capital: Usumbura.

Governor General: Léo Pétillon.

Principal products: tin, coffee, gold, cotton, hides.

Ruanda-Urundi, in east Africa, was assigned to Belgium as a mandate by the League of Nations at the end of World War I, before which it was a portion of German East Africa. It is administered under the direction of the Governor General of the Belgian Congo by a Vice Governor General. The area, placed under U. N. trusteeship in Dec. 1946, is largely mountainous, with livestock grazing the principal native activity. The European population on Dec. 31, 1955 was 6,052.

Bhutan (Kingdom)

Area: 19,305 square miles.

Population (est. 1955): 623,000 (mostly Bhotiya).

Density per square mile: 32.3.

Ruler: Maharaja Jigme Dorji Wangchuk.

Capital: Punakha.

Monetary unit: Indian rupee.

Language: Tibetan dialect.

Religion: Buddhism.

HISTORY. Bhutan is a semi-independent state lying on the southeast slope of the Himalayas, bordered on the north and east by Tibet and on the south and west by the Republic of India. The area is said to have been invaded and settled by Tibetan troops in the 9th century A.D. After almost a century of conflict between the Bhutanese and the British in India, British troops invaded the country in 1865 and negotiated an agreement under which Britain undertook to pay an annual allowance to Bhutan

on condition of good behavior. A treaty signed with India in Aug. 1949 increased this subsidy and placed Bhutan's foreign affairs under Indian control.

Until 1907, Bhutan's government was under the dual control of the clergy and laity, but the country is now ruled by a hereditary Maharaja.

The dominant people are the Bhotiyas, who are of Tibetan origin, speak a Tibetan dialect, and profess the same form of Buddhism as is prevalent in Tibet.

ECONOMIC CONDITIONS. The chief crops are rice, corn and millet; the fields, laid out on hillside terraces, are watered by an ingenious system of irrigation. Bhutan is famous for its small though sturdy mountain ponies. The chief industries are metal work, cloth weaving and fine basket and mat work. Trade is insignificant, and much of it is conducted by barter.

NATURAL FEATURES; CLIMATE. The whole of Bhutan presents a succession of lofty and rugged mountains running generally from north to south and separated by deep valleys. Mountains in the north reach a height of 24,000 feet. The climate varies according to the topography. In the extreme south, rainfall amounts to as much as 200-300 inches annually.

Bolivia (Republic) (República Boliviana)

Area: 424,162 square miles.

Population (est. Dec. 31, 1955): 3,198,139 (1950: Indian 52.9%, mestizo 32%, white 14.8%, others .3%).

Density per square mile: 7.5.

President: Hernán Siles Zuazo.

Principal cities (census 1950): La Paz, 321,063 (de facto capital); Cochabamba, 80,795 (commercial center); Oruro, 62,975 (tin mines); Potosí, 45,758 (mining); Sucre, 40,128 (legal capital).

Monetary unit: Boliviano.

Language: Spanish.

Religion: Roman Catholic.

HISTORY. Famous since Spanish colonial days for its mineral wealth, modern Bolivia was once a part of the ancient Incan Empire. After the Spaniards had defeated the Incas during the first part of the 16th century, Bolivia was subjected to the Spanish Viceroyalty of Peru, and its predominantly Indian population was reduced to slavery. During the successive South American revolts against Spain in the early 19th century, Upper Peru (as Bolivia was then called) was a vast battlefield contested by Spanish and patriot troops. The country finally won its independence in 1825; the new republic was named after Simón Bolívar, South America's famed liberator.

Bolivia's political history since independence has been extremely stormy. Since

1825 it has had more than 60 revolutions, 70 Presidents and 11 Constitutions. No elected President has served out his term.

Harassed by internal strife, Bolivia lost great slices of territory to three neighbor nations. Several thousand square miles and its outlet to the Pacific were taken by Chile after a disastrous war in 1879-83. In 1903 a piece of Bolivia's Acre province, rich in rubber, was ceded to Brazil. And in 1938, after a war with Paraguay, Bolivia gave up claim to nearly 100,000 square miles of the Gran Chaco.

Recent years have been typical of Bolivia's turbulent political history, with several illegal seizures of power culminating in a leftist revolution on July 21, 1946. Elections held May 6, 1951, were indecisive, although an exiled leftist, Victor Paz Estenssoro, obtained a near majority. A military junta which took over on May 16, 1951, was overthrown on April 11, 1952, and Paz Estenssoro became President on April 16. The three major tin mining companies were nationalized in Oct. 1952. Another leftist, Hernán Siles Zuazo, was elected President June 17, 1956.

GOVERNMENT. Under the 1938 Constitution, Bolivia is a republic, electing by popular vote a President every four years, an 18-member Senate every six years, and a 68-member Chamber of Deputies every four years. The President appoints the members of his Cabinet. The Indian majority was virtually disfranchised until July 1952, when the franchise was conferred on all those who had reached the age of 20, whether literate or illiterate.

Military service is compulsory, with a two-year training period beginning at nineteen and service on reserve until fifty. The army is fixed by law at 15,000, and there are about 12,000 federal police.

SOCIAL AND ECONOMIC CONDITIONS. Bolivia has an illiteracy rate estimated in 1950 at 69%, the highest in South America. A contributing factor is the high proportion of pure Indian population. In 1952, enrollment in primary schools was reported to be 234,000 and in secondary schools, 24,000. There are five universities.

The 5,000,000 acres under cultivation produce wheat, rice, sugar, potatoes, cacao, barley, maize, coca (source of cocaine), tobacco and cotton. Production of such basic foodstuffs as wheat and rice, however, is insufficient for domestic needs, and considerable quantities must be imported. Cattle are raised in the more temperate regions of the east and south, sheep in the departments of La Paz and Cochabamba, and llamas, alpacas and vicuñas, important sources of hides, wool and meat, are raised on the plateaus by Indians whose economy is largely dependent upon them. The fur-bearing chinchilla, a native of the colder plateau regions, is also bred.

Tin and other minerals comprise almost the whole of Bolivia's exports. Since the country is landlocked, foreign trade must pass through free ports in Chile and river ports on the Amazon. Trade statistics for 3 years (in millions of U. S. dollars):

	1953*	1954*	1955*
Exports	124.5	85.3	100.6
Imports	68.0	65.5	82.4

* Partially estimated.

Chief exports in 1955 were tin (58%), tungsten (16%), lead (6%) and zinc (6%). Leading customers in 1955 were the U. S. (60%) and the United Kingdom (33%); leading suppliers, the U. S. (38%), Argentina (10%) and Germany (9%).

Railway mileage (1955) totaled 1,690, largely in western Bolivia; the principal lines connect La Paz with the Chilean ports of Arica and Antofagasta. The highway system was estimated officially at 9,806 mi. in 1955. Airlines play an important role in Bolivian transportation. In the lowlands, thousands of miles of navigable streams are the chief means of transportation.

NATURAL FEATURES AND RESOURCES; CLIMATE. Landlocked Bolivia is a low alluvial plain throughout 60 per cent of its area toward the east, drained by the Amazon and Plata river systems. The western part, enclosed by two chains of the Andes, is a great plateau—the Altiplano—measuring 500 by 80 miles at an average altitude of 12,000 feet. More than 80 per cent of the population lives on the plateau, which also contains La Paz, the highest capital city in the world. Lake Titicaca, half the size of Lake Ontario, is one of the highest large lakes in the world, at an altitude of 12,507 feet. Islands in the lake hold ruins of the ancient Incan civilization.

Mining is the backbone of the economy. Tin, accounting normally for 70 per cent of Bolivian exports, is by far the most important mineral, most of it coming from the plateau regions of Potosí and Oruro. During World War II, Bolivia was the world's largest tin producer.

Mineral production in 1956 was: tin, 26,842 long tons; silver, 7,543,129 ounces; copper, 4,897 short tons; zinc, 18,818 tons. Antimony, gold, lead, manganese ore, tungsten concentrates, and mercury are also produced; and uranium deposits have been reported. Southern Bolivia is rich in oil, as yet relatively unexploited. Production in 1956 was about 3,201,000 barrels, six times the 1948-53 average.

From its lowland tropical forests, Bolivia gets rubber, quinine bark, almonds and brazil nuts, dyewoods, mahogany, quebracho and other hardwoods.

The climate varies from the humid heat of the equatorial lowlands in the east to

the arctic cold of the Andean peaks. In the lowlands, the average temperature is about 77°, with no great departures; rainfall is fairly heavy throughout the year (30-50 inches or more). At higher elevations in the west (to 11,000 ft.) the climate is temperate, with occasional winter frost. In the great central plateau, the weather is always cool. In La Paz it averages about 50.4°; rainfall there averages about 23 inches annually.

Brazil (Republic)

(Estados Unidos do Brasil)

Area: 3,287,195 square miles.

Population (est. July 1, 1956): 60,080,341 (1950: white, 61.7%; mestizo, 26.5%; Negro, 11.0%; other, 0.8%).

Density per square mile: 18.3.

President: Juscelino Kubitschek de Oliveira.

Principal cities (est. 1955): Rio de Janeiro, 2,725,274 (capital, chief port); (est. 1953) São Paulo, 2,500,000 (coffee and industrial center); Recife (Pernambuco), 560,000 (seaport); Salvador (Baía), 460,000 (seaport); Porto Alegre, 440,000 (seaport); Belo Horizonte, 430,000 (mining); Fortaleza (Ceará), 300,000 (seaport).

Monetary unit: Cruzeiro.

Language: Portuguese.

Religion: Roman Catholic, 95%.

HISTORY. Brazil, the only Latin American nation deriving its culture and language from Portugal, is by far the largest country in South America, covering nearly half the continent. In the Western Hemisphere it is second to Canada. In the world, it ranks after the U.S.S.R., China and Canada.

Brazil was discovered in 1500 by the Portuguese admiral, Pedro Alvares Cabral. Portuguese colonization efforts began in 1532 and Brazil became a royal colony seventeen years later. The later attempts of France and Holland to colonize Brazil were defeated by the Portuguese.

During the Napoleonic wars, the Prince Regent of Portugal (later King John VI) fled his country in advance of the French armies, and set up his royal court at Rio de Janeiro in 1808. John was drawn home by a revolution in 1820 and the Brazilians, after holding the seat of Portuguese government, rebelled at resuming colonial status and declared their independence in 1822 under Pedro, son of John VI. Harassed by trouble with his parliament, Pedro I abdicated in 1831 in favor of his five-year-old son, who became Emperor in 1840 as Pedro II. He was a popular monarch.

Despite his good works, however, Pedro II was forced to abdicate in 1889 following a military revolt, after which a republic was set up. Until 1893 Brazil was under

two military dictators, Marshal Deodoro da Fonseca and Marshal Floriano Peixoto. After a revolt against the latter in 1893, Brazil returned gradually to stability under a succession of civilian Presidents.

The President during World War I, Wenceslau Braz, co-operated with the Allies and declared war on Germany Oct. 26, 1917. Pres. Washington Luiz Pereira da Souza, 1926-30, had to cope with the world depression and was overthrown by a revolutionary group under Getúlio Vargas, who took over as provisional President.

Vargas' new Constitution in 1934 sharply curtailed state's rights and emphasized a nationalistic policy. In 1937 Vargas seized absolute power, setting up another Constitution which extended his term of office indefinitely. In World War II, Brazil co-operated well with the United Nations. Allied air bases were set up in Brazil, Brazilian naval forces patrolled the South Atlantic, and a Brazilian expeditionary force fought in Italy after the nation's declaration of war against the Axis in Aug. 1942.

Vargas was overthrown on Oct. 29, 1945. In elections held Dec. 2, 1945, victory went to the Vargas candidate—Gen. Eurico Gaspar Dutra, inaugurated as President on Jan. 31, 1946.

Vargas won the 1950 elections, taking office Jan. 31, 1951. He committed suicide Aug. 24, 1954, and was succeeded by João Café Filho. The latter took a leave of absence on Nov. 8, 1955, and a temporary regime took over until Jan. 31, 1956, when Juscelino Kubitschek de Oliveira of the Social Democratic party, who won the 1955 elections, was inaugurated.

GOVERNMENT AND DEFENSE. Under the Constitution of 1946, Brazil is a union of twenty states, five territories and one federal district. The President is popularly elected for a five-year term and may not succeed himself. The national Congress is composed of two houses—the Senate, whose members serve for eight-year terms, and the Chamber of Deputies, elected for four-year terms. Members of Congress are elected by equal, direct, compulsory and secret suffrage under a system of proportional representation.

Defense. Military service is compulsory beginning at twenty-one, with an initial training period of one year and service on reserve until forty-five.

The army received a considerable amount of U. S. lend-lease military goods during World War II. The air force, under a separate Ministry of Aviation since 1941, expanded during the war and took an active part in the Italian campaign.

The navy in Dec. 1956 had in active service 2 cruisers, 9 fleet destroyers, 8 frigates and escort vessels, 3 submarines, and other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Education is free and compulsory; under the 1946 Constitution it is given in Portuguese only. According to the 1950 census, 48.6% of the population 10 years of age and over could read and write. In 1952 there were 82,254 primary schools with 5,651,564 pupils, (1954) 2,485 secondary schools with 535,775 students, 795 commercial schools with 97,531 students and 598 superior schools with 64,645 students. There are 11 universities, of which 3 are private (Catholic), 7 state and one federal.

Agriculture. Agriculture is a mainstay of Brazil's economy, but only 4 per cent of its area is under cultivation, the rest being grazing, forest, or non-productive land. Brazil leads the world in production of coffee and castor beans, and ranks second in cacao. Production and export of both coffee and cacao are government-controlled. Coffee production in the 1956-57 season totaled 18,000,000 bags of 132 lb. each. Official estimates for other leading crops are as follows (in thousands of metric tons):

	1953	1954*	1955*
Cacao	137.0	151.6	162.0
Rice (rough)	3,072.4	3,448.0	3,920.0
Wheat	771.7	823.8	983.0
Maize	5,984.3	7,071.2	6,906.0
Tobacco	132.1	134.3	141.0
Cotton	374.9†	447.3†	406.0‡

* Preliminary. † Unginned. ‡ Ginned.

Other crops include sugar cane, sisal, fruit, bananas and coconuts.

Livestock is raised nearly everywhere, with the great centers in the central and northern states. On Dec. 31, 1954, there were 35,555,000 hogs, 17,503,000 sheep and 61,442,000 cattle.

Manufacturing. Manufacturing is still primarily for domestic consumption, but industrialization is progressing rapidly.

Production figures for 1956 included cement, 3,490,400 metric tons; pig iron, 1,144,800 tons; steel, 1,333,200 tons. The state of São Paulo is by far the leading industrial area.

Trade statistics for 3 years follow (in millions of U. S. dollars):

	1954	1955	1956
Exports	1,561.8	1,423.3	1,482.6
Imports	1,633.5	1,306.8	1,233.9

Leading exports in 1956 were coffee (70%), cotton (6%) and cacao (5%). Leading customers were the U. S. (50%), Germany (6%), Argentina (4%) and Sweden (4%); leading suppliers, the U. S. (29%), Venezuela (10%), Germany (6%) and the Netherlands Antilles (5%).

Major imports include machinery, food-stuffs (largely Argentine wheat), vehicles and petroleum products.

Communications. The coastwise and river steamers are the main links between north and south Brazil, especially within the Amazon basin where inland waterways are the only means of land communication. Navigable waterways total 26,713 miles. Coastwise traffic is restricted to Brazilian ships, but the Amazon is open to all ships. According to *Lloyd's Register*, the merchant marine had 386 vessels (100 tons and over) aggregating 862,066 gross tons on June 30, 1956.

Railway mileage (Dec. 31, 1954) was 23,-104, mostly located south of Recife. Railway development has been hampered by natural obstacles, especially by coastal mountains, but extensive government and private building is under way. Highways and roads totaled 225,000 mi. on Dec. 31, 1954. Brazil is served by numerous domestic and foreign airlines; mileage flown by domestic lines in 1955 was 70,287,000; passengers carried totaled 2,988,724.

Finance. Recent data are as follows (in billions of cruzeiros):

	1954	1955	1956*	1957*
Revenue	46.5	55.7	71.0	93.0
Expenditure	53.7	63.3	71.5	111.0

* Budget estimate.

NATURAL FEATURES AND RESOURCES; CLIMATE. Brazil covers about three-sevenths of South America, extends 2,965 miles north-south, 2,691 miles east-west, and borders every South American state except Chile and Ecuador. Its area would more than blanket that of the U. S.

There are two principal physical divisions of the Brazilian surface. The lowlands are made up of the heavily forested tropical river basin of the Amazon, the world's largest drainage area; and the less heavily forested basin of the Plata to the south. The intermediate highland is a vast plateau, 1,000 to 3,000 feet above sea level, traversed by several low mountain ranges, and extending almost from the seacoast to the Bolivian frontier and south to the plains of Rio Grande do Sul. The Central plateau comprises more than half of the country and, with the narrow coastal plain, supports 90% of the population.

More than a third of Brazil is drained by the Amazon and its more than 200 tributaries. The Amazon is navigable for ocean steamers to Iquitos, Peru, 2,300 miles upstream. Southern Brazil is drained by the Plata system—the Paraguay, Uruguay and Paraná Rivers. The most important stream entirely within Brazil is the São Francisco, navigable for a thousand miles but broken near its mouth by the 260-foot Paulo Afonso Falls, with estimated potential of 1,000,000 horsepower.

Mineral Resources. Brazil's vast mineral

resources are among her least developed assets. The most important are coal (estimated reserves of 5,000,000,000 tons; estimated 1955 production, 2,292,000 metric tons) and iron ore (metal content 65%), found mainly in Minas Gerais (1955 output, 3,600,000 metric tons). Other important minerals are gold, (1955) 111,500 troy oz.; manganese ore, (1955) 380,000 tons; petroleum, (1956) 3,885,000 barrels (over 10 times the 1950 output); diamonds; bauxite; tungsten; silver; quartz crystals; uranium; chrome ore; graphite and titanium.

Forests and Fisheries. More than half of Brazil's total area is forested, but the extensive resources are relatively undeveloped. The largest single forest commodities are timber, chiefly pine from the southern states, and the wax of the carnauba palm, used for insulation and phonograph records and produced commercially only in

Brazil (exports 1955: 12,000 metric tons). Rubber production, mostly in the Amazon basin, was estimated in 1955 at 21,600 metric tons, but it has not developed as extensively as was once expected. Other forest products are Brazil nuts, yerba maté (Paraguay tea), medicinal plants, and vegetable oils. There are vast fishing banks and grounds in the rivers and along the coast, with some 2,500 species of fish.

Climate. Brazil is almost wholly in the torrid zone, but such factors as altitude, prevailing winds, rainfall and distance from the sea combine to vary the climate from tropical to temperate. Manaus on the Amazon has an average temperature of 80.9° and annual rainfall of 71.65 inches. The corresponding figures for Rio de Janeiro are 72.5° and 44 inches. February is usually the warmest month in Rio de Janeiro. In much of the Amazon basin, rainfall averages 80 inches.

BRITISH COMMONWEALTH OF NATIONS

This is a world-wide community of ten independent nations, officially termed The Commonwealth of Nations (the United Kingdom, Australia, Canada, Ceylon, Ghana, India, the Federation of Malaya, New Zealand, Pakistan and the Union of South Africa) and their dependencies or semidependent territories bound together by allegiance to the British Crown or by recognition of the British sovereign as head of the Commonwealth and symbol of free and equal association of countries within its framework.

EUROPE

United Kingdom of Great Britain and Northern Ireland

Area: 93,599 square miles (excluding Channel Islands and Isle of Man).

Population (est. June 1956): 51,209,000 (English, Scotch, Welsh, Irish).

Density per square mile: 547.1.

Ruler: Queen Elizabeth II.

Prime Minister: Harold Macmillan.

Principal cities (census 1951): London (Greater), 8,346,137 (capital); Birmingham, 1,112,340 (iron and steel); Glasgow, 1,089,555 (seaport, shipbuilding); Liverpool, 789,532 (seaport); Manchester, 703,175 (textiles); Sheffield, 512,834 (steel, cutlery); Leeds, 504,954 (clothing); Edinburgh, 466,770 (capital, Scotland).

Monetary unit: Pound sterling (£).

Languages: English, Welsh, Gaelic.

Religion: Church of England (established church); Church of Wales (disestablished); Church of Scotland (established church—Presbyterian); Church of Ireland (disestablished); Roman Catholic; Methodist; Congregational; Baptist; Jewish.

HISTORY. Roman invasions of the 1st century B.C. brought Britain into contact with the continent. When the Roman legions withdrew in the 4th century A.D., Britain fell easy prey to the invading hordes of Angles, Saxons and Jutes from Scandinavia and the Low Countries. Seven large kingdoms were established, and the original Britons were forced into Wales and Scotland. It was not until the 11th century that the country finally became united under the Danish King Canute. Following the death of Edward the Confessor (1066), a dispute about the succession arose, and William Duke of Normandy invaded England, defeating the Saxon noble, Harold II, at the Battle of Hastings (1066). The Norman conquest was accompanied by the introduction of Norman law and feudalism, changing the customs of England.

The reign of Henry II (1154-89), first of the Plantagenets, saw an increasing centralization of royal power at the expense of the nobles, but in 1215 John (1199-1216) was forced to sign the Magna Carta, which awarded the people, especially the nobles, certain basic rights. Edward I (1272-1307) continued the conquest of Ireland, reduced Wales to subjection, and made some gains in Scotland. In 1314, however, English forces led by Edward II were ousted from Scotland after the battle of Bannockburn. The late 13th and early 14th centuries saw the development of a separate House of Commons with tax-raising powers.

Edward III's claim to the throne of France led to the Hundred Years' War

The Commonwealth of Nations

Europe			America—(cont.)		
Political subdivision	Area (sq. mi.)	Population	Political subdivision	Area (sq. ml.)	Population
United Kingdom	93,599	51,209,000 ^a	Jamaica and depend- encies	4,708	1,550,000 ⁵
Channel Islands	75	102,770 ¹	Leeward Islands	422	126,780 ⁵
Isle of Man	221	55,213 ¹	Trinidad and Tobago	1,980	742,500 ⁵
Gibraltar	2	24,900 ⁵	Windward Islands	821	313,400 ⁵
Malta	122	313,955 ⁵			
Africa			Asia		
Basutoland	11,716	590,000 ⁵	Aden colony	108	138,441 ⁵
Bechuanaland	275,000	296,000 ⁵	Aden protectorate	112,000	800,000 ⁵
Gambia	4,003	285,000 ⁵	Bahrain Islands	231	120,000 ⁵
Ghana	91,843	4,691,000 ^a	Borneo:		
Kenya	223,478	6,150,000 ^a	Colony of North Borneo	29,388	389,122 ^a
Mauritius and dependencies	805	579,123 ^a	Brunei	2,226	55,000 ^a
Nigeria (including British Cameroons)	373,250	32,780,000 ⁵	Sarawak	47,069	626,223 ^a
Rhodesia and Nyasa- land, Federation of:			Ceylon	25,332	8,929,000 ^a
Northern Rhodesia	290,323	2,183,100 ^a	Cyprus	3,572	531,000 ^a
Nyasaland	49,177	2,596,600 ^a	Hong Kong	391	2,440,000 ^a
Southern Rhodesia	150,354	2,481,200 ^a	India, Republic of	1,269,640	381,690,000 ⁵
St. Helena and dependencies	119	5,355 ^a	Federation of Malaya	50,690	6,058,317 ⁵
Seychelles	156	40,417 ^a	Singapore and dependencies	287	1,212,588 ⁵
Sierra Leone	27,926	2,050,000 ⁵	Pakistan	364,737	83,603,000 ^a
Somaliland	67,997	640,000 ⁵			
South-West Africa	317,725	458,000 ⁵	Oceania		
Swaziland	6,705	217,000 ⁵	Australia, Common- wealth of	2,974,581	9,427,558 ^a
Tanganyika Territory	362,688	8,456,000 ^a	Fiji	7,040	345,164 ⁵
Uganda	93,981	5,593,000 ^a	Gilbert and Ellice Islands	369	40,000 ⁵
Union of South Africa	472,733	14,167,000 ⁷	Nauru	8	3,404 ³
Zanzibar and Pemba	1,020	278,000 ⁵	New Hebrides	5,700	53,000 ⁵
America			New Zealand	103,740	2,221,169 ⁷
Bahamas	4,404	116,530 ⁷	Norfolk Island	13	1,176 ²
Barbados	166	229,569 ^a	Papua-		
Bermudas	21	41,992 ^a	New Guinea	183,590	1,701,458 ⁵
British Guiana	82,997	508,000 ^a	Solomon Islands	11,500	103,000 ⁵
British Honduras	8,867	82,333 ^a	Tonga (Friendly Islands)	270	56,838 ^a
Canada	3,619,616	16,420,000 ⁷	Western Samoa	1,131	94,128 ^a
Falkland Islands (excluding dependencies)	4,618	2,220 ^a			

(Note: Each population figure is followed by superior number denoting the year of estimate or census: ¹ for 1957, ^a for 1956, ³ for 1955, etc.)

(1338–1453), which ended with the loss of almost all the large English territory in France. In England the great poverty and discontent caused by the war was intensified by the Black Death, a plague which reduced the population by about one-third. The Wars of the Roses (1455–85), a struggle for the throne between the House of York and the House of Lancaster, were ended by the victory of Henry Tudor (Henry VII) at Bosworth Field (1485).

During the reign of Henry VIII (1509–47), the Church in England asserted its

independence from the Roman Catholic Church. Under Edward VI and Mary, the two extremes of religious fanaticism were reached and it remained for Henry's daughter, Elizabeth I (1558–1603), to set up the Church of England on a moderate basis. In 1588 the Spanish Armada, a fleet sent out by Catholic King Philip II of Spain, was defeated by the English and destroyed during a storm. It was during Elizabeth's reign that England became a world power.

Elizabeth's heir was of the house of

Stuart—James VI of Scotland—who joined the two crowns as James I (1603-25). The Stuart Kings incurred large debts and were forced either to depend on Parliament for taxes or to raise money by illegal means. In 1642 war broke out between Charles I and a large portion of the Parliament; Charles was defeated and executed in 1649, and the monarchy was then abolished. The Puritan Commonwealth endured for ten years, but after the death (1658) of Oliver Cromwell, the Lord Protector, the government fell to pieces and Charles II was restored to the throne in 1660. The struggle between the King and Parliament continued, but Charles II knew when to compromise. His brother James II (1685-88) possessed none of his ability and was ousted by the Revolution of 1688, which confirmed the predominant position of Parliament. James' daughter, Mary, and her husband, William of Orange, now ruled jointly.

The reign of Queen Anne (1702-14) was marked by the Duke of Marlborough's victories over France at Blenheim, Oudenarde and Malplaquet in the War of the Spanish Succession. England and Scotland meanwhile were joined together by the Act of Union (1707). Upon the death of Anne, the distant claims of the elector of Hanover were recognized, and he became King of England as George I.

The 18th century was a period of gradual growth and change. At home the unwillingness of the Hanoverian Kings to rule resulted in the formation by the King's ministers of a Cabinet, headed by a Prime Minister, which directed all public business. Abroad the constant wars with France resulted in expansion of the British Empire all over the globe, particularly in North America and India. This imperial growth was checked by the revolt of the American colonies (1775-81).

The age-long struggle with France broke out again in 1793, and during the lengthy Napoleonic Wars, which ended at Waterloo (1815), England was pitted at one time against almost all of Europe.

The Victorian era, named after Queen Victoria (1837-1901), saw the growth of a democratic system of government which had begun with the Reform Bill of 1832. The two important wars in Victoria's reign were the Crimean War against Russia (1853-56) and the Boer War (1899-1902). The latter was accompanied by enormous extension of England's sway in Africa.

The reign of Edward VII (1901-10) was marked by increasing uneasiness at home and abroad. Within four years after the accession of George V (1910), England entered World War I when Germany invaded Belgium. The nation was led by coalition Cabinets headed first by Herbert Asquith and then (Dec. 1916) by the Welsh states-

AREA AND POPULATION OF MAJOR SUBDIVISIONS*

Subdivision	Area sq. mi.	Population, est. June 1956
England	50,871	44,667,000
Wales	7,474	
Scotland	29,795	5,145,000
Northern Ireland	5,459	1,397,000

* Not including Channel Islands and Isle of Man.

man, David Lloyd George. The years after the war were marked by labor unrest which culminated in the general strike of 1926. A Labour ministry formed early in 1924 by Ramsay MacDonald fell in October of that year. In 1929 a second Labour government was formed, but the world economic depression forced a change in 1931, and a national government was formed composed chiefly of Conservative members, although MacDonald remained Prime Minister until 1935. King Edward VIII succeeded to the throne in 1936 on his father's death but abdicated eleven months later (in order to marry an American, Wallis Warfield Simpson, whose second divorce was then pending) in favor of his brother, who became King George VI.

The efforts of Prime Minister Neville Chamberlain to meet by peaceful means the rising threat of Nazism in Germany failed with the German invasion of Poland (Sept. 1, 1939), which was followed by England's entry into World War II (Sept. 3, 1939). Serious Allied reverses in the spring of 1940 led to Chamberlain's resignation and the formation of another coalition war Cabinet by Conservative leader Winston Churchill, who led England through most of World War II. Churchill resigned as the coalition leader shortly after V-E Day, but then formed a "caretaker" government which remained in office until after the parliamentary elections of July 5, 1945, in which the Labour party won an overwhelming victory. The government formed by Clement R. Attlee on July 26 began a moderate socialistic program.

Internationally, the Attlee government continued Britain's close co-operation with the United States through the North Atlantic Treaty and in the Korean war, at the same time solidifying its position in Western Europe in opposition to the U.S.S.R. The Labour regime, returned to office by a slight majority in the parliamentary elections of Feb. 1950, lost by a narrow margin in the Oct. 1951 elections. On Oct. 26 Winston Churchill again became Prime Minister at the head of a Conservative government. George VI died Feb. 6, 1952, and was succeeded by his daughter, Elizabeth II.

Churchill voluntarily stepped down on April 5, 1955, in favor of Sir Anthony Eden, who led the Conservatives to an-

other victory in elections May 26, 1955. The Suez crisis and the abortive Anglo-French invasion of Egypt (Oct. 31, 1956) were followed by Eden's resignation on grounds of ill health (Jan. 9, 1957). Harold Macmillan succeeded him.

RULER. Queen Elizabeth II, born April 21, 1926, elder daughter of King George VI and Queen Elizabeth, succeeded to the throne on the death of her father, Feb. 6, 1952; married Nov. 20, 1947, to Prince Philip, Duke of Edinburgh, born June 10, 1921; their children are Prince Charles (heir presumptive), born Nov. 14, 1948, and Princess Anne, born Aug. 15, 1950. The Queen's sister is Princess Margaret Rose, born Aug. 21, 1930; her uncles are Prince Edward Albert, Duke of Windsor (formerly King Edward VIII), born June 23, 1894, and Prince Henry William, Duke of Gloucester, born March 31, 1900.

GOVERNMENT & DEFENSE. The United Kingdom is a constitutional monarchy, with a Queen and a Parliament which has two houses: the House of Lords with about 830 hereditary peers, 26 spiritual peers, 16 Scottish representative peers, a number of Irish representative peers (vacancies are no longer filled), and a few life peers who hold or have held high judicial office; and the House of Commons, numbering since 1955 630 members elected by practically universal suffrage. Supreme legislative power is vested in Parliament, which holds office for five years unless sooner dissolved. The executive power of the Crown is exercised by the Cabinet, headed by the Prime Minister. The latter, normally the head of the party commanding a majority in the House of Commons, is appointed by the sovereign, with whose consent he in turn appoints the rest of the Cabinet. All ministers must be members of one or the other house of Parliament; they are individually and collectively responsible to the Crown, the Prime Minister and Parliament. The Cabinet proposes bills and arranges the business of Parliament but it depends entirely on the votes of confidence in Commons. The lords cannot hold up "money" bills, but they can delay other bills for a period of at least one year.

By the Act of Union (1707) the Scottish Parliament was assimilated with that of England, and Scotland is now represented in Commons by 71 members. The Secretary of State for Scotland, a member of the Cabinet, is responsible for the administration of Scottish affairs.

Parliamentary elections held on May 26, 1955, returned 345 Conservatives and associates, 277 Labour party, 6 Liberals and 2 Irish nationalists. Polling at contested elections was: Conservatives and associates, 13,336,182; Labour, 12,405,130; others, 295,772 (including Communist, 33,144).

The members of the Cabinet (June 1957): Harold Macmillan (Prime Minister, First Lord of the Treasury), Richard A. Butler (Secretary of State for Home Affairs, Lord Privy Seal), Viscount Kilmauir (Lord Chancellor), Peter Thorneycroft (Chancellor of the Exchequer), Selwyn Lloyd (Secretary of State for Foreign Affairs), Earl of Home (Lord President of the Council, Secretary of State for Commonwealth Relations), Alan Lennox-Boyd (Secretary of State for the Colonies), John S. MacLay (Secretary of State for Scotland), Duncan Sandys (Minister of Defense), Derek Heathcoat-Amory (Minister of Agriculture, Fisheries and Food), Iain Macleod (Minister of Labor and National Service), Henry Brooke (Minister of Housing and Local Government and for Welsh Affairs), Viscount Hailsham (Minister of Education), Sir Percy Mills (Minister of Power), Harold Watkinson (Minister of Transport and Civil Aviation), Dr. Charles Hill (Chancellor of the Duchy of Lancaster).

Local Government. Both England and Wales are divided into 62 administrative counties, including the county of London, and 83 county boroughs. The counties are administered by the justices and by popularly elected county councils. All incorporated towns are administered by a municipal corporation consisting of the mayor, aldermen and burgesses. Local government in Scotland is comparable to that in England and Wales.

Judiciary. The ultimate British court of appeal is the House of Lords; the final court of appeal for certain of the Dominions is the Judicial Committee of the Privy Council. Below the House of Lords on the civil side is the High Court of Judicature, divided into two parts, the Court of Appeal, and the High Court of Justice. On the criminal side is the Court of Criminal Appeal, which is the court of last resort barring the rare allowance of an appeal to the Lords. Actually these superior courts hear only a small fraction of the cases, and most of the trials are held in a complicated system of inferior courts, exercising original jurisdiction. The Lord Chancellor, Lord Chief Justice, Lords of Appeal in Ordinary (law members of the House of Lords), and Lord Justices of Appeal are appointed by the Prime Minister.

Defense. Compulsory military service, introduced in May 1939, is still in effect, and will continue until 1959 under the terms of National Service acts since passed. An act passed in 1950 makes 2 years' national service compulsory for men between 18 and 26. The armed forces are comprised of three separate services—the Army, the Royal Navy and the Royal Air Force. The Prime Minister retains responsibility for defense, but the Minister of Defense has coordinating and executive duties.

Service ministers are no longer Cabinet members but continue to be members of the Defense Committee headed by the Prime Minister.

Military-budget estimates for the fiscal years 1956-57 and 1957-58 follow:

	1956-57	1957-58
Navy	\$351,500,000	\$316,150,000
Army	\$519,000,000	\$445,500,000
Air	\$527,000,000	\$506,150,000

The estimated strength of the armed forces on April 1, 1957, was 718,800, including 451,900 regulars, 251,700 national servicemen and 15,200 women; the projected strength for April 1, 1958, was 654,300.

Control of the land forces is exercised by the Army Council, headed by the Secretary of State for War. Its members include the Chief of the Imperial General Staff, the Adjutant General and Quartermaster General.

The Royal Navy is controlled by the Board of Admiralty, headed by the First Lord of the Admiralty, who is responsible to Parliament. Other members include the First Sea Lord and Chief of Naval Staff. In Dec. 1956, the Royal Navy had in active service and in reserve 5 fleet carriers, 9 light aircraft carriers, 5 battleships, 22 cruisers, 68 destroyers, 54 submarines, 168 frigates and escort vessels and many other smaller craft. Several aircraft carriers, cruisers and smaller craft were under construction.

Control of the Royal Air Force is vested in an Air Council analogous to the Army Council and headed by the Secretary of State for Air. The Fleet Air Arm was transferred to the Royal Navy in 1937.

A total of 5,896,000 men served in the armed forces during World War II; there were also 640,000 in the Women's Auxiliary Forces. Units of the navy, army and air force served in Korea.

Research and development in the field of atomic energy and weapons is the responsibility of the Atomic Energy Authority.

SOCIAL AND ECONOMIC CONDITIONS.

Education. The school system in England and Wales has undergone considerable change since enactment of the Education Act of 1944. This measure makes primary and secondary training available for all children at public expense, with the secondary stage starting at the age of 11. The school-leaving age was raised from 14 to 15 on April 1, 1947. Statistics are:

England and Wales (Jan. 1955): 24,272 primary schools, pupils 4,796,763; 5,562 secondary schools, pupils 2,077,816; special schools 743, pupils 58,034. Scotland (1954-55): 2,871 primary schools, pupils 598,011; 809 secondary schools, pupils 234,875.

In 1955-56 the 14 English universities had 66,813 students; the 3 university colleges 2,191 students; the University of Wales 4,459 students and the 4 Scottish universities 15,118 students.

Agriculture. Agriculture remains one of Britain's chief industries, employing about 800,000 persons.

LEADING AGRICULTURAL PRODUCTS (in thousands)

	1955		1956*	
	Acres	Long tons	Acres	Long tons
Wheat	1,948	2,599	2,293	2,845
Barley	2,296	2,936	2,323	2,800
Oats	2,581	2,709	2,564	2,486
Sugar beets	424	4,556	426	5,169
Potatoes	874	6,278	921	7,533

* Provisional.

Livestock (June 30, 1956) included 10,907,000 cattle, 23,594,000 sheep, 5,474,000 hogs and 92,464,000 poultry. Cattle occupy a predominant position in British agriculture, accounting for about 40 per cent of the total farm output. Production of cheese (1955-56, including farmhouse) was 75,000 long tons; butter (including farmhouse), 27,000 tons; beef and veal, 687,000 tons; mutton and lamb, 191,000 tons; bacon and ham, 311,000 tons; wool (fleece), 31,000 tons.

Industry. The most important British manufacture is heavy goods such as machinery, tools, bridges and locomotives; industry is concentrated in the north and Midlands of England. Sheffield is the center of the steel industry, while the china industry is concentrated in the Midlands. The cotton industry is centered in Lancashire; Liverpool, Manchester, Oldham, Preston and Bolton are the main manufacturing towns. The wool industry, England's oldest large trade, is located just east of the cotton towns, at Leeds, Bradford and Hull in Yorkshire. An important industrial region is the central Lowlands of Scotland, where woollens and other fabrics, lace, glass, paper, steel and pig iron are produced. Important shipyards are located along the coast. Vessels aggregating 1,457,000 gross tons were completed in 1956; they represented about 26% of the world total. On Dec. 31, 1956, 328 vessels of 2,135,218 gross tons were under construction in the United Kingdom. Steel production in 1956 was 20,659,600 long tons; that of pig iron, 13,156,000 tons. The iron and steel industry passed into public ownership in 1951 but was denationalized in 1953. In 1956, 707,600 cars and 297,000 trucks and other commercial vehicles were produced.

In April, 1948, there were 51,050 industrial establishments having more than 10 employees; the total working population on Dec. 31, 1956, was 24,087,000.

Trade. The United Kingdom's economic prosperity is dependent on its foreign trade, and the nation made great efforts after World War II to build up its volume of exports.

OVERSEAS TRADE

(Value in millions of pounds sterling)

	Imports	Exports	Re-exports
1952	3,477.0	2,584.2	143.9
1953	3,343.4	2,582.1	105.5
1954	3,373.9	2,674.2	100.7
1955	3,880.9	2,905.4	118.9
1956*	3,889.2	3,172.1	146.4

* Provisional.

LEADING EXPORTS AND IMPORTS

(In millions of pounds sterling)

Exports

	1955	1956*
Machinery (nonelectrical)	459.8	503.6
Road vehicles and aircraft	337.5	372.5
Chemicals	233.0	244.5
Electrical machinery	191.8	217.3
Iron and steel	156.4	173.3

Imports

	1955	1956*
Meat	294.6	293.9
Fruits and vegetables	218.3	236.8
Cereals and cereal preparations	221.8	232.8
Nonferrous base metals	231.2	222.6
Wool	191.5	187.6

* Provisional.

DISTRIBUTION OF TRADE, 1954-56

(millions of pounds sterling; 1956, provisional)

Chief Destinations of Exports

	1954	1955	1956
United States	149.4	182.9	243.2
Australia	277.6	284.3	239.8
Canada	131.9	140.8	177.7
India	114.8	130.2	167.8
South Africa	156.1	166.7	154.2
New Zealand	125.9	139.3	127.3

Chief Sources of Imports

	1954	1955	1956
United States	282.4	419.9	408.5
Canada	272.8	343.7	347.6
Australia	235.9	263.9	236.4
New Zealand	176.0	179.9	197.0
Sweden	116.9	139.6	145.0
India	148.4	159.0	141.5

Communications. The merchant marine on June 30, 1956, totaled 5,508 ships (100 tons and over) with a gross tonnage of 19,545,875—about 18.5% of the world total and second only to the U. S. merchant fleet.

Nationalization of the railway and canal systems in Great Britain became effective Jan. 1, 1948, and they are now operated by the government's Transport Commis-

sion. Railway mileage in the United Kingdom (1955) was 20,586; in 1956, 1,005,300,000 passengers and 275,800,000 long tons of freight were carried in Great Britain. The total length of public highways is 183,477 miles, of which 157,089 are in England and Wales and 26,388 in Scotland. In Nov. 1956 licensed motor vehicles totaled 6,711,000, including 3,801,000 cars and 1,091,000 commercial trucks. Radio receiving licenses in April 1957 numbered 7,509,000; television and radio sets, 7,050,000.

British air services throughout the world are nationalized under the Minister of Civil Aviation. Service is supplied by two public corporations—British Overseas Airways (BOAC) and British European Airways.

Finance. Recent data are as follows (in millions of pounds sterling):

	1955-56	1956-57	1957-58*
Revenue	4,893.1	5,157.8	5,288.8
Expenditure	4,496.0	4,868.0	4,826.9

* Budget estimate.

The net deadweight debt on Mar. 31, 1956, was £27,040,000,000; 1955, £26,933,000,000; 1950, £25,986,000,000; Sept. 1939, £8,400,000,000.

ESTIMATED REVENUE AND EXPENDITURE 1957-58

	Estimated Revenue
Income tax	£2,176,250,000
Surtax	149,000,000
Death duties	170,000,000
Stamps	60,000,000
Profits tax, excess profits tax and excess profits levy	255,000,000
Other inland revenue duties	500,000
Total inland revenue	£2,810,750,000
Customs	1,204,500,000
Excise	912,850,000
Total customs and excise	£2,117,100,000
Motor vehicle duties	£93,000,000
Total receipts from taxes	£5,020,850,000
Post office (net receipts)	£20,000,000
Broadcast receiving licenses	£31,000,000
Receipts from sundry loans	£32,000,000
Miscellaneous	£185,000,000
Total estimated revenue	£5,288,850,000

Estimated Expenditure

Consolidated fund:	
National debt service	£640,000,000
Sinking funds	38,000,000

Payments to		
Northern Ireland		
Exchequer	69,000,000	
Other consolidated		
fund services	10,000,000	
Total consolidated fund	£757,000,000	
Supply services: Defense:		
Army	445,500,000	
Navy	316,150,000	
Air	506,150,000	
Ministry of		
Supply	197,600,000	
Ministry of		
Defense	17,634,000	
Total	£1,483,034,000	
Less sterling counterpart		
of economic aid appropri-		
ated-in-aid of defense		
votes	£62,750,000	
	£1,420,284,000	
Civil service:		
Central government		
and finance	16,014,000	
Commonwealth		
and foreign	86,359,000	
Home department,		
law and justice	91,671,000	
Education and		
broadcasting	478,983,000	
Health, housing, local		
government	792,991,000	
Trade, labor		
and supply	81,901,000	
Works, station-		
ery, etc.	78,409,000	
Agriculture and		
food	298,052,000	
Transport, fuel,		
power and in-		
dustrial re-		
search	202,709,000	
Pensions, national		
insurance,		
national assist-		
ance	474,403,000	
Total civil service	£2,601,492,000	
Less—net reduc-		
tion in supply		
expenditure	£10,000,000	
	£2,591,492,000	
Tax collection	£58,101,000	
Total supply services	£4,069,877,000	
Total estimated		
expenditure	£4,826,877,000	
Surplus	£461,973,000	
Grand total	£5,288,850,000	

NATURAL FEATURES AND RESOURCES;
CLIMATE.The United Kingdom, consisting of England, Wales, Scotland and Northern Ireland, is a third the size of Texas. England, in the southeast part of the British Isles, is separated from Scotland on the north by the granite Cheviot Hills; from

them the Pennine chain of uplands extends south through the center of England, reaching its highest point in the Lake district in the northwest. To the west along the border of Wales—a land of steep hills and valleys—are the Cambrian Mountains while the Cotswolds, a range of hills in Gloucestershire, extend into the surrounding shires. The remainder of England is plain land, though not necessarily flat, with the rocky sand-topped moors in the southwest, the rolling downs in the south and southeast and the reclaimed marshes of the low-lying Fens in the east central districts. Scotland is divided into three physical regions—the Highlands, the Central Lowlands, containing two-thirds of the population, and the Southern Uplands. The western Highland coast is intersected throughout by long narrow sea-lochs or fiords. Scotland also includes the Outer and Inner Hebrides and other islands off the west coast, and the Orkney and Shetland Islands off the north coast.

Wales is generally hilly; the Snowdon range in the northern part culminates in Mt. Snowdon (3,557 ft.), highest in either England or Wales.

In addition to the numerous inlets and bays of the coast, England has a group of lakes in the northwest which includes Windermere, Coniston, Derwentwater, Ullswater and Grasmere. Important rivers flowing into the North Sea are the Thames, Humber, Tees and Tyne. In the west are the Severn and the Wye, which empty into the Bristol Channel and are navigable, as are the Mersey and Ribble. Scotland has many picturesque lakes; its most important river is the Clyde.

Minerals. Great Britain's most important mineral resource is coal, which was responsible to a large extent for British industrial supremacy during the late 18th and the 19th centuries. The coal mines were nationalized in 1946. Reserves have been variously estimated at from 150,000 million to 200,000 million tons. Prior to World War II, coal was exported in declining amounts to the continent, mainly to France, Sweden, Denmark and Italy. Since the war, however, exports have been negligible, and Britain has been hard put to meet her own minimum domestic requirements.

Most of the British iron ore is produced in England, especially in Cumberland, Lancashire and Staffordshire. Tin ore and copper are obtained almost exclusively from Cornwall, while lead comes mainly from Flint, Durham and Derbyshire. Zinc occurs mainly in North Wales, the north of England, the Isle of Man and the county of Dumfries in Scotland. The whole British supply of china clay (kaolin)—of great importance in the ceramic, papermaking, bleaching and chemical industries—comes from Cornwall. Petroleum production is

negligible, but oil shale exists in large quantities.

MINERAL PRODUCTION, 1955 and 1956 (in thousands of long tons)

	1955	1956
Coal *	221,630	222,650
Iron ore	16,175†	16,245†
Aluminum	120	124
Superphosphates (P ₂ O ₅ content)	168	179
Zinc (smelter)	81	81

* Excluding No. Ireland. † 52 weeks

Water Power. The most important potential sources of water power are in the highlands of Scotland, North Wales and Cumberland. Electricity generated in England, Scotland and Wales averaged 7,263,000,000 kwh. monthly in 1956. Gas manufacture averaged 1,427,000,000 cu. m. monthly in that year. Nationalization of the electric and gas industries became effective in 1948.

Forests and Fisheries. Great Britain was once heavily forested, but centuries of timber cutting and clearing have denuded the country of the original forests. Woodland of all types approximates 3,000,000 acres, and barely 40 per cent of Britain's surface is covered with timber. Consequently the nation is heavily dependent on imported timber.

Great Britain's sea fishing industry is among the most important in the world. The principal kinds of fish caught are herring, cod, haddock, plaice and hake, classed as wet fish, and, among shellfish, oysters, crabs and lobsters. The most important factor in the export trade is salted herring, which ordinarily represents about 70 per cent of the total. The principal grounds frequented by British fishermen are the North Sea; off Iceland; the Faeroes; south of Ireland; west of Scotland; west of Ireland; the Irish Sea and English Channel. The catch of wet fish in 1956 was 932,817 long tons valued at £46,628,299; most important was cod (387,611 tons valued at £18,641,029).

Climate. Although Great Britain lies in the same approximate latitude as Labrador, its climate is tempered by the westerly winds blowing off the warm Gulf Stream. The sea winds also prevent excessive summer heat. Rainfall is abundant, especially in the early fall. London's famed "pea-soup" fogs occur most frequently in November and March. It has been estimated that clouds, fogs or mists obscure the sun for approximately two-thirds of the daylight hours.

The mean annual temperature of England and Wales is about 50°; the west coast is somewhat warmer than the east. January is the coldest month (average about 40°) and July the hottest (about 61.5°). Highest July temperatures usually occur around London, where the mean is somewhat above 64°. Coldest months in

the capital are December (about 38°) and January (about 39°). The mean annual rainfall in London is 23½ inches.

North of Birmingham, the summers are cool, and in Edinburgh the mean temperature in July is usually below 60°. Rainfall is less than in London.

NORTHERN IRELAND

(Part of United Kingdom)

Area: 5,459 square miles.

Population (est. June 1956): 1,397,000.

Density per square mile: 255.9.

Governor: Lord Wakehurst.

Prime Minister: Viscount Brookeborough.

Principal cities (census 1951): Belfast, 443,671 (capital); Londonderry, 50,092 (clothing).

Monetary unit: Pound sterling.

Language: English, Gaelic.

Religions (census 1951): Roman Catholic (34.4%), Presbyterian (29.9%), Church of Ireland (25.8%), Methodist (4.9%), others (5%).

Northern Ireland comprises the six predominantly Protestant counties of Antrim, Armagh, Down, Fermanagh, Londonderry and Tyrone (collectively known as Ulster), which form the northern part of the island of Ireland. The area is an integral part of the United Kingdom, but under the terms of the Government of Ireland Act (1920) it has a semi-autonomous government.

The government has only limited powers for local purposes, and many matters are reserved to the central government at Westminster. Executive authority is vested in the Crown-appointed Governor, who is advised by a Cabinet of eight ministers headed by the Prime Minister. The Parliament consists of the House of Commons of 52 members elected for 5-year terms, and the Senate of 26 members elected by the House of Commons. The general elections of Oct. 22, 1953, returned 38 Unionists, 9 Nationalists and 5 representatives of other groups to the House. The area is also represented by 12 members in the British Parliament at London.

In 1954-55 there were 1,606 primary schools (up to 11 years) in Northern Ireland, with enrollment of 203,055, and 81 secondary schools, with enrollment of 30,899. Students at Queen's University (Belfast) numbered 2,590.

Agriculture is the largest single industry; about two-thirds of the country is devoted to crops and pasture under a system of mixed farming. The leading crops include potatoes, oats and flax. In 1955 there were 905,890 cattle, 878,480 sheep and 696,410 hogs.

The two principal manufacturing industries are linen and shipbuilding, both centered in Belfast. The linen industry was established by Huguenot weavers who fled France after the revocation of the Edict of Nantes in 1685.

On Dec. 31, 1956, 19 ships of 243,687 tons were under construction at Belfast.

The topography of Northern Ireland is somewhat similar to that of the rest of the island, with two ranges (Donegal and Sperrin) and an extensive plateau (Antrim) in the northeastern part. Mineral resources are limited to deposits of basalt, clay, sandstone and granite. Fishing is an important industry, off the coast and in the numerous lakes and rivers which abound in salmon, eels and trout. Lough Neagh, covering about 153 square miles, is the largest lake in the British Isles.

The climate is comparable to that of the rest of the United Kingdom, although somewhat more equable. The highest mean summer temperature is about 59° in July, and the mean winter temperature rarely falls below 40°. Most of the comparatively light rainfall occurs in the autumn.

ISLE OF MAN

Lieutenant Governor: Sir Ambrose Dundas.

Located in the Irish Sea, equidistant from Scotland, Ireland and England, the Isle of Man is administered according to its own laws by a government composed of the Lieutenant Governor (appointed by the Crown), a Legislative Council of 11 members, and a House of Keys of 24 elected members, one of the most ancient legislative assemblies in the world. All sitting together constitute the court of Tynwald, which controls revenue and has executive power. Acts of the British Parliament do not affect the island unless it is named.

Agriculture and fishing are the principal industries. The island is a popular English summer resort.

CHANNEL ISLANDS

Lieutenant Governor of Jersey: Adm. Sir Randolph Nicholson.

Lieutenant Governor of Guernsey: Air Marshal Sir Thomas Elmhirst.

This group of islands, lying in the English Channel off the northwest coast of France, is the only portion of the Duchy of Normandy belonging to the English Crown, to which it has been attached since the conquest of 1066. It was the only British possession occupied by Germany during World War II.

For purposes of government the islands are divided into Jersey (45 sq. mi.) and the bailiwick of Guernsey (24 sq. mi.), including Alderney (3 sq. mi.), Sark (2 sq. mi.), Herm and Jethou. The islands are administered according to their own laws and customs by local governments headed by Crown-appointed Lieutenant Governors. Acts of Parliament in London are not binding on the islands unless they are specifically mentioned.

The two main sources of income for the population are agriculture, especially stock-raising, and the tourist trade. French is still the official language, although English is the main language of commerce.

GIBRALTAR—Status: Colony.

Governor: Lt. Gen. Sir Harold Redman.

Gibraltar, at the south end of the Iberian Peninsula, is a rocky promontory commanding the western entrance to the Mediterranean. Aside from its strategic importance, it is also a free port, naval base and coaling station. It was captured by the Arabs crossing from Africa into Spain in A.D. 711. In the 15th century it passed to the Moorish ruler of Granada and later became Spanish. It was captured by an Anglo-Dutch force in 1704 during the War of the Spanish Succession and passed to Britain by the Treaty of Utrecht in 1713. Most of the inhabitants are of Spanish, Italian and Maltese descent. There are no important industries. Gibraltar's climate is equable, with summer temperatures averaging about 84° maximum. Mean annual temperature is 64.4° and annual rainfall is about 35 inches.

MALTA—Status: Self-governing colony.

Capital: Valletta (population 18,801).

Governor: Maj. Gen. Sir Robert Laycock.

Prime Minister: Dominic Mintoff.

Foreign trade (1955): exports, £850,625 (52% to Britain); re-exports, £1,882,296 (largely fuel for ships and aircraft); imports, £21,187,115 (39% from Britain). Chief domestic export: potatoes (22%).

Agricultural products: potatoes, onions, cereals, fruits.

The Maltese islands lie between Europe and Africa, in the central channel linking the eastern and western Mediterranean. The inhabited islands are Malta (95 sq. mi.), Gozo (26 sq. mi.) and Comino (1 sq. mi.). The Knights of St. John (Malta), who obtained the islands from Charles V in 1530, reached their highest fame when they withstood an attack by superior Turkish forces in 1565. Napoleon seized Malta in 1798, but the French forces were ousted by British troops in 1799, and British rule was confirmed by the Treaty of Paris (1814). The principal importance of Malta is its strategic location as a naval base; it was heavily attacked by German and Italian aircraft during World War II but was never invaded by the Axis. Most of the population are Maltese, speaking the Phoenician Maltese language, a tongue akin to Syriac and Arabic. The islands are densely populated (2,554 per square mile in 1956).

Under its 1947 Constitution, Malta enjoys a measure of self-government. The locally-elected Assembly has complete control over domestic affairs, but the British government keeps control over matters dealing with defense and foreign affairs.

The climate is temperate and healthful. Annual mean temperature is 64.5°, with June–September the hottest months and December–February the coldest (56°). Rainfall is irregular, averaging about 20 inches annually.

AFRICA

BRITISH SOUTH AFRICAN TERRITORIES

High Commissioner: Sir Percivale Lieching.

The three British territories in southern Africa—Basutoland, Bechuanaland and Swaziland—are not part of the Union of South Africa, but are administered by a High Commissioner responsible to the Secretary of State for Commonwealth Relations in the British Cabinet. He also holds the office of High Commissioner for the United Kingdom in the Union of South Africa.

BASUTOLAND—Status: Colony.

Capital: Maseru (population 4,000).

Resident Commissioner: A. G. Chaplin.

Foreign trade (1954): exports, £1,954,105; imports, £2,612,007. Chief exports: wool, mohair.

Agricultural products: corn, wheat, sorghum.

Basutoland is a mountainous enclave surrounded by the Union of South Africa and bounded by the Orange Free State, Cape Province and Natal. It was constituted a native state under British protection by a treaty signed with the native chief Moshesh in 1843. It was annexed to Cape Colony in 1871, but on Mar. 13, 1884, was restored to direct control by the Crown. The Resident Commissioner is advised by a council of 100, of whom 95 are nominated by the native chiefs who administer the affairs of their tribes.

The population is restricted almost entirely to the lowland strip in the west; the white population (1,676 by the last census, in 1946) consists solely of officials, missionaries, traders and a few labor agents for employers in the Union of South Africa. About 100,000 natives are regularly employed in the Union. Sheep raising is highly developed. Land is the common property of the nation and is held in trust by the chiefs.

The climate is dry and variable; temperatures range from 11° to 93°. Rainfall also is variable, but it is heaviest during the summer months; it averages about 30 inches annually.

BECHUANALAND—Status: Protectorate. Administrative center: Mafeking, in Cape Province (population 4,666).

Resident Commissioner: M. O. Wray.

Foreign trade (1955): exports, £2,821,647;

imports, £2,462,495. Chief export: pastoral products.

Agricultural products: hides and skins, cattle, butter, millet, maize.

Minerals: gold and silver.

Bechuanaland lies in south central Africa, bounded on the south and southeast by the Union of South Africa, on the west by South-West Africa, on the north by Angola and Northern Rhodesia and on the northeast by Southern Rhodesia. Its average elevation is 3,300 feet and the greater part is gently undulating. The area was placed under British protection on Sept. 30, 1885, to prevent further Boer encroachment and has since remained a British protectorate. The form of government is similar to that of Basutoland.

Most of the inhabitants are Bantu, but there were 2,325 Europeans in 1946, a few of them farmers. The country is essentially pastoral, with cattle raising and dairy farming the chief industries. Gold is mined in the Tati district near Francistown. There is also some mining of silver and copper. Timber is produced for use as fuel and pit props.

The summers are intensely hot; winters (May–August) are pleasant. Rainfall occurs mostly between December and May, and averages about 18 inches annually.

SWAZILAND—Status: Protectorate.

Capital: Mbabane (population 1,600).

Resident Commissioner: B. A. Marwick.

Foreign trade (1954): exports, £3,134,462; imports, £2,386,332. Chief exports: cattle, asbestos.

Agricultural products: cattle, hides and skins, butter, tobacco, corn, millet.

Minerals: asbestos, tin, gold.

Swaziland lies at the southeastern corner of the Transvaal. It is largely hilly, with an average elevation of 4,000 feet in the west. It came under the protection of the Transvaal Republic in 1894 but was made a British protectorate in 1906 under the High Commissioner for South Africa.

The natives are mostly Swazi; there were 3,204 Europeans in 1946, mostly farmers. Grazing is the principal native occupation; there is excellent pasture in the high land to the west. Tropical and subtropical crops are raised in the lower areas. Tin is mined near Mbabane.

Rainfall is moderate throughout the protectorate (about 20 inches a year) and is heaviest in summer. Average temperature ranges from about 65° in July to 80° or more in January.

EAST AFRICA HIGH COMMISSION

The East Africa High Commission, comprising the Governors of Kenya, Tanganyika and Uganda, administers the public utilities and other central services of those territories, and has power to legislate with

respect thereto with the advice and consent of a Central Legislative Assembly. The governments of the three areas are otherwise independent of one another.

KENYA—Status: Colony and protectorate.

Capital: Nairobi (pop. 1948: 118,976).

Governor: Sir Evelyn Baring.

Foreign trade (1956)*: domestic exports, £28,983,451 (25% to Britain); re-exports, £4,051,042; imports, £69,823,272 (51% from Britain). Chief exports: coffee (47%), tea (9%), sisal (7%).

Agricultural products (exports 1956): coffee (26,670 long tons), tea (6,956 tons), sisal (35,206 tons).

Minerals: gold (exports 1956: 13,636 oz.), sodium carbonate, silver, salt.

Forest products: wattle bark extract (exports 1956: 21,817 long tons), timber.

* Import and re-export figures exclude outward transfers of imported goods to Tanganyika and Uganda.

Kenya extends along the Indian Ocean between Ethiopia and Tanganyika Territory and westward to Lake Victoria and Uganda. Formerly known as the East Africa Protectorate, it was held under a concession from the Sultan of Zanzibar by the Imperial British East Africa Company from 1888 to 1905. It became a Crown colony in 1920, the coastal strip leased from the Sultan becoming a protectorate.

The colony is predominantly agricultural, and a large area is cultivated by Europeans. Altitude ranges from sea level to more than 9,000 ft.; hence, the cultivation of tropical, subtropical and temperate crops is possible. Non-natives (1956) included 57,700 Europeans, 151,900 Indians and Goans and 33,000 Arabs.

Kenya has been plagued since 1952 by serious outbreaks of native terrorism inspired by the anti-white Mau Mau secret society, which have taxed strengthened security forces, including British regular army units.

The coastal zone of Kenya is hot and humid; February to April are the hottest months, with a mean temperature of 82° at Mombasa. June and July are coolest (76° at Mombasa). The yearly average rainfall is about 48 inches. In the interior highlands the climate is temperate, and the rainfall comparatively heavy. Yearly average temperatures at Nairobi are 60° to 66°.

TANGANYIKA TERRITORY—Status: U. N. trust territory.

Capital: Dar es Salaam (pop. 1952: 99,140).

Governor: Sir Edward F. Twining.

Foreign trade (1956)*: domestic exports, £44,804,789 (31% to Britain); re-exports, £1,422,860; imports, £35,885,139 (41% from Britain). Chief exports: sisal (24%), coffee (21%), cotton (17%), diamonds.

Agricultural products (exports 1956): sisal (185,588 long tons), coffee (21,630

tons), cotton (27,440 tons), peanuts, sugar cane, tea.

Minerals (exports 1956): gold (59,293 troy oz.), diamonds (357,982 carats).

Forest products: gum arabic and copal, beeswax, timber.

* Import and re-export figures exclude outward transfers of imported goods to Kenya and Uganda.

Tanganyika Territory, with the Belgian Ruanda and Urundi, constituted German East Africa from 1884 until 1919. It was administered under League of Nations mandate by Britain until 1946, when it was placed under United Nations trusteeship, with Great Britain as the administering power.

Tanganyika's narrow coastal plain is bordered on the west by the precipitous eastern side of the Central African plateau. Mount Kilimanjaro (19,565 ft.) is the highest point on the African continent. The territory also includes adjacent islands in the Indian Ocean.

The territory is sparsely populated; two-thirds of it is uninhabited. In 1956 there were 27,700 Europeans, 76,400 Indians and Goans, 16,900 Arabs. It is the world's largest producer of sisal hemp. Most of the hemp, which is of the highest grade, is grown in the drier parts of the coast belt under European supervision. Stock raising is also important, but its progress is hampered by prevalence of the tsetse fly.

The climate generally is hot and humid on the coastal areas, with the temperature averaging 80° at Dar es Salaam. Rainfall in the capital averages 60 inches. Inland the rainfall and temperature are lower.

UGANDA—Status: Protectorate.

Capital: Entebbe (pop. 1948: 7,942).

Governor: Sir Frederick Crawford.

Foreign trade (1956)*: domestic exports, £40,417,520 (28% to India); re-exports, £1,090,203; imports, £28,105,774 (30% from Britain). Chief exports: cotton (48%), coffee (39%).

Agricultural products (exports 1956): cotton (67,214 long tons), coffee (61,646 tons), sugar cane, rubber, tea, sisal.

Minerals: gold, tin.

* Import and re-export figures exclude outward transfers of imported goods to Kenya and Tanganyika.

Uganda lies immediately south of Anglo-Egyptian Sudan and west of Kenya, along the northwest shore of Lake Victoria. The surface is extremely diversified, with lofty plateaus, snow-capped peaks, swamps, forests and arid areas. A British protectorate over the area was proclaimed in 1894. A large measure of home rule is given the native states, notably Buganda, whose *kabaka* (king) is assisted by a ministry and native parliament.

Agriculture, including livestock, is the basis of the economy. Cotton is raised, principally by natives, and coffee, tea and rubber are grown on large plantations.

Most natives possess large herds of cattle and sheep. In 1956 there were 8,400 Europeans, 54,300 Indians and Goans and 2,000 Arabs.

Like the topography, the climate is extremely variable. At Entebbe, the mean temperature is about 70°.

GAMBIA—Status: Colony and protectorate.

Capital: Bathurst (population 19,602).

Governor: Sir Percy Wyn Harris.

Foreign trade (1956): exports, £2,552,-834; imports, £3,729,501. Chief export: peanuts (90%).

Agricultural products: peanuts (exports 1956: 38,107 long tons), hides and skins, millet, rice, palm kernels.

Gambia, smallest of the British West African dependencies, is a stretch of land 200 miles long on both sides of the lower Gambia River, surrounded on all land sides by French West Africa and fronting on the Atlantic Ocean. During the 17th century it was settled by various companies of English merchants; slavery was the chief source of revenue until it was abolished in 1807. Gambia became a Crown colony in 1843. Except for the island of St. Mary, on which the capital stands, the area is administered as a protectorate.

The inhabitants, mostly Negroes or Negroids, are predominantly Mohammedan. The principal economic activity is the cultivation of peanuts. Internal transportation is by steamer and launch. Temperatures are fairly regular throughout the year, ranging from about 60° to 85°. Maximum rainfall is in August and September.

Ghana

(Member of Commonwealth of Nations)

Area: 91,843 square miles.

Population (est. 1956): 4,691,000 (almost entirely African).

Density per square mile: 51.1.

Ruler: Queen Elizabeth II.

Governor General: Earl of Listowel.

Prime Minister: Kwame Nkrumah.

Principal cities (census 1948): Accra, 135,926 (capital); Kumasi, 59,420 (rail center); Sekondi-Takoradi, 44,557 (rail terminus and port).

Monetary unit: Gold Coast pound.

Languages: Native tongues (Twi, Fanti, Ga), English.

Religions: Pagan, Mohammedan, Christian.

Ghana, the newest independent member of the British Commonwealth, was known until 1957 as the Gold Coast. It was discovered by the Portuguese in 1471 and later became a center of the slave trade and of European rivalry. The original British Gold Coast colony (coastal and southern areas) was constituted in 1874; Ashanti was proclaimed a colony in 1901 and the Northern Territories a protectorate in 1902.

Togoland, formerly German, was divided into French and British spheres and placed under League of Nations mandate after World War I, and under U. N. trusteeship in 1946. As a result of a plebiscite held under U. N. auspices in 1956, British Togoland became, with U. N. approval, an integral part of Ghana.

In the years after World War II, Ghana won an increasing degree of self-government and finally gained independence within the Commonwealth on March 6, 1957. It became the 81st member of the U. N. two days later.

Under the 1957 Constitution, Ghana's government is headed by the Crown-appointed Governor General, who is advised by a Council of Ministers headed by the Prime Minister. Legislative power is vested in the popularly elected National Assembly consisting of a speaker and 104 members. The maximum life of the assembly is five years. The Constitution vests considerable power in the chiefs and the five regions into which Ghana is divided.

Except for about 12,000 non-Africans (1955), the population is all Negro. Paganism is predominant; there are Mohammedan and Christian minorities. The population is highly tribalized and over 50 different languages are spoken.

The mainstay of the economy is the cultivation of cacao, in the production of which Ghana leads the rest of the world (exports 1956: 234,406 long tons). Secondary export crops include palm kernels, copra, kola nuts, coffee and rubber. Livestock raising is important in the Northern Territories and along the coast east of Accra. Industrial development is in its infancy.

Recent foreign trade data (in millions of pounds):

	1953	1954	1955	1956
Exports	89.9	114.7	96.2	86.6
Imports	73.8	71.2	87.9	88.8

Chief exports in 1956 were cacao (59%), wood and lumber (11%), diamonds (9%), gold (9%) and manganese ore (8%). Chief customers in 1955 were Britain (41%), the U. S. (18%) and the Netherlands (11%); leading suppliers, Britain (47%), Japan (10%) and the Netherlands (8%).

Railways total about 600 mi.; in 1956, 4,200 mi. of trunk roads were open. The only deepwater port is at Takoradi; at all others loading and discharge is by surf boat.

Mineral resources are abundant. Most important is gold, mined at Tarkwa, Bibiani and Obuasi (exports 1956: 599,316 oz.). Others include diamonds (2,518,563 carats), manganese ore (635,851 long tons) and bauxite. Forest resources are extensive and large amounts of hardwoods, notably mahogany, are exported from the forest

zone of the interior; exports in 1956 totaled 26,951,818 cu. ft.

The coastal belt of the new nation, extending about 270 mi. along the Gulf of Guinea, is sandy, marshy and generally exposed. Behind it is a gradually widening grass strip. The forested plateau region to the north is broken by ridges and hills. The climate on the coast is hot and humid, ranging on the average from 78° to 80°. Rainfall is about 27 inches annually at Accra.

KENYA (See EAST AFRICA HIGH COMMISSION)

MAURITIUS—Status: Colony.

Capital: Port Louis (pop. 1954: 74,950).

Governor: Sir Robert Scott.

Foreign trade (1956): exports (including re-exports), 280,739,754 rupees* (82% to Britain); imports, 224,149,482 rupees (34% from Britain). Chief export: sugar (96%).

Agricultural products: sugar (1956: 572,000 metric tons), tea, tobacco, copra.

* Includes value of sugar preference certificates.

Mauritius is a mountainous island of volcanic origin in the Indian Ocean, about 500 miles east of Madagascar. It was seized in 1810 from the French, who had settled it in 1715, and was formally ceded to Great Britain by the Treaty of Paris in 1814.

With over 700 persons per square mile, the island is one of the most densely populated regions in the world. The population has a large white element, chiefly French and British, but British Indians are predominant. There are many half-castes. The leading industry is sugar cultivation.

The climate is pleasant during the cool season, but extremely hot from December to April (90° to 96° at Port Louis). During this period there are also frequent torrents of rain and occasional severe cyclones.

NIGERIA, FEDERATION OF—Status: Colony and protectorate.

Governor general: Sir James Robertson.

Principal cities (census 1952-53): Ibadan, 459,196 (native metropolis); Lagos, 267,407 (capital); Ogbomosho, 139,535 (native city); Kano, 130,173 (textiles, leather goods, cattle).

Monetary unit: Nigerian pound.

Languages: Native tongues, Arabic, English.

Religions: Mohammedan, Pagan, Christian.

Nigeria, with an area twice that of California, is situated on the Gulf of Guinea in West Africa. It was visited by European traders and explorers in the 16th and 17th centuries, and by the end of the 18th century British operators had a virtual monopoly in the area. Between 1879 and 1914, a series of private colonial developments by the British, together with reorganizations of the Crown's interest in the region, resulted in the formation of Nigeria as it exists today. During World

War I, native troops of the West African frontier force joined with French forces to defeat the German garrison in the Cameroons. The Cameroons, a narrow strip along Nigeria's eastern border, became a League mandate after World War I, divided between France and Britain. Today the British Cameroons, a U. N. trust territory, is attached to Nigeria for administrative purposes.

Under the Constitution of Oct. 1, 1954, Nigeria is a federation of 3 regions (Northern, Western and Eastern), and the quasi-federal territory of the Southern Cameroons. The administration is headed by the Governor General, assisted by a Council of 14 ministers, of whom 4 are ex officio and 10 are selected from the federal House of Representatives of 184 popularly elected members. Certain subjects are reserved to the federal government; each region has an elected Assembly and a Cabinet headed by a Premier. Administration of the Southern Cameroons is headed by a Federal Commissioner; there is a Legislative Assembly and an Executive Council. The Northern Cameroons is attached to the Northern Region.

The vast majority of the population is Negro, although in the north there has been an admixture caused by invasions of Fula, Berber and Arab or Arabized people. Mohammedanism is the dominant religion.

Most of the people are agriculturists. The staple food crops are durra (guinea corn), millet, yams, bananas and maize. Among the leading export crops are cacao (1956 exports: 117,113 long tons), peanuts (decorticated) (448,084 tons), palm kernels (451,069 tons), palm oil (147,551 tons) and rubber (32,731 tons). Hides and skins are also important export items. Aside from small native industry, there is no manufacturing.

Recent foreign trade figures are as follows (in millions of pounds):

	1954	1955	1956
Exports	150.0	132.0	134.6
Imports	114.0	135.8	152.6

Chief exports in 1956 were peanuts (21%), cacao (18%), palm kernels (15%) and palm oil (9%). Leading customers were Britain (63%), the Netherlands (10%) and the U. S. (9%); leading suppliers, Britain (45%), Japan (13%) and western Germany (8%).

There is a substantial internal trade; Kano is a busy terminal for caravan routes. The Niger and several other rivers are navigable; otherwise, the 1,901 miles of railway are the chief means of transportation. Highway mileage totals about 21,000. The main ports, except Lagos, are on rivers. Air service is supplied by BOAC, Air France and other international lines.

Nigeria is a leading tin producer—13,364 long tons in 1956—from mines on the Bau-chi plateau. Other minerals are coal, gold, lead, silver and tungsten. Over half the area is forested, but forest resources are comparatively unexploited. Mahogany is the main timber export.

All of Nigeria lies within the tropics, but the climate varies from tropical in the south to near temperate on some parts of the plateau. In the south the temperature varies between 70° and 100°, and averages upwards of 80°. Rainfall there is over 100 inches a year.

FEDERATION OF RHODESIA AND NYASALAND

Governor General: Earl of Dalhousie.

Prime Minister: Sir Roy Welensky.

Foreign trade (1956): exports, £181,747,-655 (58% to Britain, 10% to Union of South Africa); imports, £159,265,842 (41% from Britain, 34% from Union of South Africa). Chief exports (1955): copper (38%), tobacco (15%), asbestos (4%).

This is a federation of three British central African territories—Northern Rhodesia, Nyasaland and Southern Rhodesia. The federation embraces a block of territory (area 489,854 sq. mi.) extending southward for about 1,000 mi. from Tanganyika and the Belgian Congo to Bechuanaland and the Union of South Africa.

The federation came into existence on Oct. 23, 1953, when its Constitution took effect. The government is headed by the Crown-appointed Governor General, who is advised by a council of ministers headed by the Prime Minister. Legislative authority is vested in the Federal Assembly of 35 members, 17 from Southern Rhodesia, 11 from Northern Rhodesia and 7 from Nyasaland. Of these, 9 members (6 Africans and 3 Europeans) are specially elected or appointed to represent African interests. The federal government has exclusive control of several matters, including foreign affairs, defense, immigration, foreign trade, currency, transport and postal service.

The first general election for the Assembly took place on Dec. 15, 1953, and the first Assembly convened on Feb. 2, 1954.

NORTHERN RHODESIA—Status: Protectorate.

Capital: Lusaka (pop. 1954: 64,500).

Governor: Sir Arthur Benson.

Agricultural products: tobacco, maize, wheat.

Minerals: copper (1956: 429,000 short tons), cobalt, vanadium, lead, zinc.

Northern Rhodesia is in south central Africa. Much of the country consists of high plateau, with the Congo-Zambezi watershed rising in places to 5,000 feet. Rhodesia was assigned in 1889 to the British South Africa Company, headed by Cecil

Rhodes. Administrative control was transferred to the Crown on Apr. 1, 1924.

Native tribes number from 50 to 60; there were 64,800 Europeans in 1956. More than 3,000,000 acres are owned and occupied by Europeans. Metals constitute almost all exports by value. Lead and zinc deposits occur at Broken Hill; copper at Bwana M'Kuba. The main line of the Rhodesian railway crosses the northern part of the colony from Livingstone to the Congo border. A number of the rivers are navigable.

Average temperature in the south ranges from about 65° in July to 80° or more in October. The rainfall occurs principally between November and April; it varies widely in different parts of the protectorate.

NYASALAND—Status: Protectorate.

Capital: Zomba (pop. 1953: 5,000).

Governor: Sir Robert Armitage.

Agricultural products: tobacco (sales 1956: 34,337,000 lb.), tea, cotton.

Nyasaland, a British protectorate since 1891, is a narrow area lying between Mozambique, Northern Rhodesia and Tanganyika Territory along the southern and western shores of Lake Nyasa. Agriculture is the chief occupation, both of the European settlers and natives. Europeans numbered 6,700 in 1956.

The climate is extremely humid along the shores of Lake Nyasa, although the temperature rarely rises above 95°. In the highlands, above 3,000 feet, average temperatures are considerably lower. The dry season, from May to September, is comparatively cool. Annual rainfall is about 35 inches in the lowlands and 50 inches in the highlands.

SOUTHERN RHODESIA—Status: Self-governing colony.

Capital: Salisbury (pop. 1953: 90,000).

Governor: Vice-Adm. Sir Peveril William-Powlett.

Prime Minister: R. S. Garfield Todd.

Agricultural products: tobacco (sales 1956: 173,608,926 lb.), corn, peanuts, meat, hides and skins.

Minerals (1956): asbestos (118,000 short tons), gold (535,000 fine oz.), coal (3,917,000 tons), chrome ore (448,000 tons).

Southern Rhodesia is separated from Northern Rhodesia by the Zambezi River.

The country was settled in 1890 by the British South Africa Company, led by Cecil Rhodes. With the expiration of the company's charter, the white residents voted (1922) in favor of a responsible government of their own, and on Sept. 12, 1928, the country was annexed to Britain.

Southern Rhodesia has responsible government and a popularly elected Legislative Assembly of 30 members, but control of foreign relations and certain other matters is reserved to the federal government.

Most of the inhabitants are natives, but the country is well-adapted to European settlers, who in mid-1956 numbered 175,-800. In addition, there were 13,030 Asiatics and half-castes. Mining is the basis of the economy. Farming ranges from ranching to tobacco growing, but mixed farming is becoming more common. Conditions for cattle raising and dairy farming are especially favorable. Manufacturing is of growing importance, with the factories producing goods valued at £61,871,000 in 1953. The colony is well served with railways, roads and airlines, and has abundant electric power.

The hottest month is October (mean maximum 85.2°); the coolest are June, July and August, when frost is likely to occur. Generally the days are hot throughout the year, and the nights are frequently cool. Rainfall, averaging 28 inches annually, is greatest in October to December.

ST. HELENA—Status: Colony.

Capital: Jamestown (population 1,547).

Governor: Sir James Harford.

Foreign trade (1956): exports, £64,147 (71% to Britain); imports, £206,792 (44% from Britain). Chief export: hempen products (82%).

Agricultural products: flax, potatoes.

St. Helena is a volcanic island (47 sq. mi.) in the South Atlantic about 1,200 miles from the west coast of Africa. It is famous as the place of exile of Napoleon (1815-21). It was taken for Britain in 1651 by the British East India Company and became a Crown colony in 1833. Attached to it are Ascension Island (34 sq. mi.), 800 miles northwest, and the Tristan da Cunha group (45 sq. mi.), about 1,500 miles southwest. Most of the inhabitants are of mixed European, East Indian and African descent.

Although St. Helena is in the tropical zone, its climate is temperate and healthful; the temperature varies from 68° to 84° in summer and 57° to 90° in winter. Rainfall is extremely variable.

SEYCHELLES—Status: Colony.

Capital: Victoria (population 10,000).

Governor: Sir William Addis.

Foreign trade (1956): exports (domestic), 6,617,929 rupees (69% to India); imports, 7,484,576 rupees (38% from Britain). Chief export: copra (69%).

Agricultural products: cinnamon, patchouli oil, coconuts, maize, sugar cane.

This archipelago of about 92 islands in the Indian Ocean was seized from France by British troops in 1794 and was ceded to Great Britain by the Treaty of Paris in 1814. The principal island is Mahé (55 sq. mi.), about 600 miles northeast of Madagascar. The climate is temperate.

SIERRA LEONE—Status: Colony and protectorate.

Capital: Freetown (population: 64,576).

Governor: Sir Maurice Dorman.

Chief Minister: M. A. S. Margai.

Foreign trade (1956): exports, £13,184,-605 (63% to Britain); imports, £23,093,-100 (54% from Britain). Chief exports: diamonds (41%), iron ore (30%), palm kernels (11%).

Agricultural products: palm kernels (exports 1956: 57,645 long tons), palm oil, rice, millet, cassava, rubber.

Minerals (exports 1956): iron ore (1,328,-019 long tons), diamonds (647,797 carats), gold (452 troy oz.).

Forest products: palm kernels, piassava.

Sierra Leone lies on Africa's west coast between French Guinea and Liberia. It is a well-watered hilly country but has a low swampy coastland with an extremely unhealthy climate. The coastal area (colony proper) was ceded to English settlers in 1788 as a home for Negroes discharged from the British armed forces and also for runaway slaves who had found asylum in London. The British protectorate over the hinterland was proclaimed in 1896. It was not until 1928 that slavery was totally abolished in the protectorate. Under the 1951 Constitution as amended the House of Representatives has 57 members, of whom 51 are elected directly or indirectly.

Freetown is the best harbor on the west coast. Iron ore (60% metal content) from deposits at Marampa is shipped from Pepel, northeast of Freetown.

SOMALILAND—Status: Protectorate.

Administrative center: Hargeisa (population, about 20,000 in hot season and 40,-000 in cold season).

Governor: Sir Theodore Pike.

Foreign trade (1955): exports, £1,373,000; imports, £2,880,000. Chief export: hides and skins.

Agricultural products: cattle, hides and skins, grains.

Forest products: gums and resins.

British Somaliland extends along the Gulf of Aden for about 400 miles and inland for 80 to 220 miles. The interior is an elevated plateau falling in steep escarpments to the coastal plain. It came under Egyptian influence in 1875, but during the years 1884-86 treaties guaranteeing British protection were signed with the various Somali chiefs. Italian troops occupied the protectorate in 1940, but it was retaken by British troops in 1941. Both executive and legislative power is exercised by the Governor.

Most of the inhabitants are nomadic Somalis of Mohammedan faith. Their principal activity is stock raising. The climate is extremely hot and arid, with rainfall in the coastal areas averaging less than 8 inches. The average temperature at Berbera, on the coast, is 77° in January and about 98° in July.

SOUTH-WEST AFRICA (See **UNION OF SOUTH AFRICA**)

SWAZILAND (See **BRITISH SOUTH AFRICA PROTECTORATES**)

TANGANYIKA & UGANDA (See **EAST AFRICA HIGH COMMISSION**)

Union of South Africa

(Member of Commonwealth of Nations)

Area: 472,733 square miles.*
Population (est. June 30, 1957): 14,167,000* (European, 20.9%; Bantu, 66.9%; mixed, 9.2%; Asiatic, 3.0%).

Density per square mile: 30.0.*
Ruler: Queen Elizabeth II.
Governor General: Ernest G. Jansen.
Prime Minister: Johannes G. Strijdom.
Principal cities (est. 1956): Johannesburg, 1,006,500 (gold, industrial center); Capetown, 687,900 (seat of legislature, seaport); Durban, 591,300 (seaport); Pretoria, 327,200 (seat of administration); Port Elizabeth, 231,400 (seaport).

Monetary unit: South African pound (RSA).

Languages: English, Afrikaans.
Religions (European pop., 1946): Dutch Reformed Churches, 55%; Anglican Church, 19%; Methodist, 6%; Presbyterian, 5%; Roman Catholic, 5%; others 10%.

* Excluding South-West Africa.

HISTORY. After the discovery of the Cape of Good Hope in 1488 by Bartholomeu Diaz, the Dutch sent the first colonists to the area in 1652. The British seized the territory in 1814 near the close of the Napoleonic wars, when Holland was France's ally. In protest against the British rule, thousands of Boers, settlers of Dutch descent, trekked northward between 1835 and 1838 and set up the republics of Orange Free State and Transvaal, subsequently recognized by the British.

The discovery of gold in Transvaal in 1886 brought an influx of English and other foreigners. British demands that these immigrants be enfranchised by the Transvaal government precipitated the South African War of 1899-1902, won by the British. By the Treaty of Vereeniging (May 31, 1902) the Boers renounced the independence of Transvaal and Orange Free State. In 1910, Cape Colony, Transvaal, Natal and the Orange Free State were set up as the Union of South Africa, with dominion status and with Louis Botha, a former Boer general, as the first prime minister. During World War I, South African forces seized German South-West Africa, over which the Union later received a mandate by the Treaty of Versailles.

When World War II broke out, there was considerable pro-German and anti-British feeling in South Africa. The country went to war against the Axis, however, under Prime Minister Jan C. Smuts.

In the elections of May, 1948, Smuts' United party was defeated by a Nationalist-Afrikaner coalition, which favored strict racial segregation. Enforcement of this policy led to severe racial disturbances and unrest and a prolonged constitutional crisis. The National party (merged with the Afrikaner party in 1951) was continued in office in the April 1953 elections.

GOVERNMENT AND DEFENSE. The Union, as a self-governing nation, has its own Legislature, a Senate of 89 elected or appointed for ten years, and a House of Assembly of 159 members elected for five years. All legislators must be Union nationals of European descent, and suffrage is virtually limited to whites. The Queen is represented by a Governor General named by her after consultation with the Union. He can summon or dissolve the Senate and House, but a general election must be held at least once every five years.

In parliamentary elections held April 15, 1953, the National party won 94 seats, United party 57 and Labour party 5. Three seats are held by representatives of natives.

Political considerations made the draft inexpedient in World War II, and all members of the armed forces were volunteers. The postwar strength of the defense forces is fixed as follows: army, 4,640; air force, 3,319; navy, 863; a total strength of 8,822 as opposed to 5,549 in the prewar establishment. The navy, only slightly expanded in World War II, has 60 small vessels, including 2 destroyers and 3 frigates.

SOCIAL AND ECONOMIC CONDITIONS.
Education. Education for white children is compulsory from 7-16. Primary education is free and, except for vocational schools and the 9 universities, all education is under provincial control.

In 1953 there were 2,676 state and state-aided primary and secondary schools for European scholars, who numbered 540,165, and 7,325 non-European schools with enrollment of 1,172,474. The 9 universities had 24,703 students in 1955.

The official languages are English and Afrikaans. The latter, derived from 17th-century Dutch, is taught in almost all the schools. About 70 per cent of the population over 7 years old understands both languages. European and Asiatic immigration is strictly controlled.

Agriculture. South Africa is predominantly a pastoral country, with less than 15 per cent of its area considered arable. Sheep and cattle raising are the principal occupations, especially in the high veldt. Wool production in 1955-56 was estimated at 314,000,000 lb. In 1954 there were 37,141,579 sheep, 11,604,249 cattle and 491,140 hogs.

Climate and differences in terrain combine to give a great variety of agricultural

products. The staple crop is maize, grown widely with a production varying from 1½ to 3 million tons annually. In southwest Cape Province, products of the Mediterranean type predominate, while in the coastal belt of Natal and in northern Transvaal, subtropical crops, especially sugar, are grown.

Production of leading crops in 1955-56 was estimated as follows: maize, 3,283,000 metric tons; wheat, 795,000 tons; tobacco, 17,900 tons; sugar, 842,000 tons.

Manufacturing and trade. Food, beverages and tobacco, and metal products are leading products. As a result of the need for armaments in World War II, the Union's manufacturing is no longer mainly devoted to agricultural processing. A war-time iron and steel industry was established, and cement, chemical, textile and auto assembly plants were expanded. Steel production (1956) was 1,608,000 metric tons; pig iron, 1,365,600 tons; cement, 2,470,800 tons. In 1952-53 there were 16,064 factories with 819,658 workers; gross value of production was £SA1,165,224,000. The major industrial area is southern Transvaal.

Trade statistics (in millions of South African pounds):

	1954	1955†	1956†
Exports*	321.4	368.9	412.6
Imports	443.6	482.2	494.7

* Excluding gold. † Including South-West Africa.

Chief exports in 1956 (besides gold estimated at £SA193,200,000) were wool (15%) and diamonds (8%). Main customers (1956) were Britain (26%), Rhodesia and Nyasaland (13%) and the U. S. (7%); leading suppliers, Britain (32%), the U. S. (20%) and Germany (6%). Principal imports included textiles, farm and industrial machinery, motor vehicles and petroleum products.

Communications. The well-organized railway system, mostly Union-controlled, totaled 13,400 miles in 1954. Roads suitable for motor traffic amounted to 100,000 miles. According to *Lloyd's Register*, the merchant marine had 141 vessels (100 tons and over) aggregating 166,802 gross tons on June 30, 1956.

Finance. Recent data are as follows (in millions of South African pounds):

	1955-56	1956-57*	1957-58†
Revenue	317.0	275.7	286.5
Expenditure	342.8	263.7	273.0

* Revised budget estimate. † Budget estimate.

The gross public debt of the Union on Dec. 31, 1956, was £SA1,007,200,000, of which £SA73,000,000 was external.

NATURAL FEATURES AND RESOURCES; CLIMATE. The Union has a high interior plateau, or veldt, nearly half of which averages 4,000 feet in elevation. There are no important mountain ranges, although

the Great Escarpment, separating the veldt from the coastal plain, rises to over 10,000 feet. The principal river is the Orange, rising in Basutoland and flowing westward for 1,300 miles through the Union's center to the Atlantic.

Extensive mineral resources account for the economic prosperity. The Union is the world's leading gold producer. Diamond production is now surpassed in importance by coal. Mineral production for 1956 included gold, 15,896,693 oz.; coal, 35,569,818 short tons; copper, 47,201 tons; diamonds, 2,577,017 carats; iron ore (60-65% metal content), 2,270,000 tons; (1955) asbestos, 119,500 tons; chromite, 596,000 tons; manganese ore, 648,000 tons; platinum, 388,830 oz.; silver, 1,461,000 oz. Uranium, gypsum, tin and tungsten also are mined.

The whaling industry, centered at Durban on the east coast, produces considerable amounts of whale oil. The Union has extensive fishery resources along the 1,500 miles of coast line.

Except for the western semi-arid regions, the climate is generally subtropical, much like that of northern Florida. Rainfall averages about 40 inches a year on the east coast and decreases sharply westward. The mean annual temperature is remarkably uniform; at Johannesburg it is 60.6°, with January the hottest month. Most of the rainfall occurs from October to March.

SOUTH-WEST AFRICA—Status: Mandate.

Administrator: Daniel du P. Viljoen.

Capital: Windhoek (population 23,359).

Agricultural products: hides and skins, butter, corn, wheat.

Minerals: diamonds (1956: 988,653 carats), vanadium concentrates, tungsten, lead, tin, iron ore, copper.

The mandate, bounded on the north by Angola, and on the east by Bechuanaland and the Union of South Africa, was discovered by the Portuguese explorer Diaz in the late 15th century. It is for the most part a portion of the high plateau of South Africa with a general elevation of from 3,000 to 4,000 feet. It became a German colony in 1884 but was conquered by South African forces in 1915, becoming a Union mandate by the terms of the Treaty of Versailles. The Union of South Africa's application for incorporation of the territory into the Union was rejected by the United Nations assembly on Dec. 14, 1946, and the Union was invited to prepare a trusteeship agreement instead. By a law passed in April, 1949, however, the territory was brought into much closer association with the Union—including representation in the Union Parliament.

The country in general is better suited to grazing than to the raising of crops because of the light rainfall. The karakul

sheep industry is particularly well-developed; in 1956, 2,802,927 pelts were exported. The principal port is Walvis Bay.

ZANZIBAR—Status: Protectorate.

Capital: Zanzibar (population 60,000).

Sultan: Seyyid Sir Khalifa bin Harub.

British Resident: Sir Henry Potter.

Foreign trade (1955): exports, £4,955,124 (47% to Indonesia); re-exports, £1,826,571; imports, £6,702,661 (28% from Britain). Chief export: cloves (80%).

Agricultural products: cloves (1956: 12,044 long tons), clove oil, coconut oil, copra.

The protectorate consists principally of the islands of Zanzibar (640 sq. mi.) and Pemba (380 sq. mi.), just off the East African coast. Before 1890, the sultanate's territory also included a large area on the mainland, now comprising Italian Somaliland, Kenya and Tanganyika Territory. It was proclaimed a British protectorate Nov. 4, 1890. The British Resident administers the government, but the Sultan still retains considerable authority.

The principal industry is the production of cloves—about 80 per cent of the world supply.

The climate is excessively hot and moist, with a mean annual temperature of 80.5°. June to September is the coolest season of the year.

WESTERN HEMISPHERE

BAHAMAS—Status: Colony.

Capital: Nassau (population 36,246).

Governor: Sir Raynor Arthur.

Foreign trade (1956): exports (including re-exports), £1,195,531 (57% to the U. S.); imports, £12,712,049 (53% from the U. S.). Chief exports: lumber (26%), crawfish, pit-props.

Agricultural products: tomatoes, citrus fruit, sisal.

Sea products: sponges, lobsters, crawfish.

The Bahamas are an archipelago of about 3,000 islands, islets (cays) and rocks, east of Florida and north of Cuba, extending from N.W. to S.E. for about 800 miles. Only about 20 of the islands are inhabited; the most important is New Providence (20 sq. mi.) on which Nassau is located. The islands were reached by Columbus in Oct., 1492, and were a favorite pirate resort in the early 18th century. They have been a Crown colony since 1717. The Constitution provides for a nominated Legislative Council and a popularly elected Assembly. The Governor is advised by an Executive Council.

Over 85 per cent of the population is Negro. The tourist trade is of paramount importance, especially at Nassau, which is a favorite winter resort. In 1956, 155,003 tourists visited the colony. The climate is exceptionally agreeable, with mean temperatures ranging from 60° (January to

March) to 88° (June to September). The rainy season is May through October; annual average fall at Nassau is 18 inches. Hurricanes occur usually from July to October.

BARBADOS—Status: Colony.

Capital: Bridgetown (population 13,345). Governor: Sir Robert Arundell.

Prime Minister: Sir Grantley Adams.

Foreign trade (1956): exports, BWI\$36,204,012 (53% to Britain); imports, BWI\$60,917,300 (35% from Britain). Chief exports: sugar (67%), molasses (12%), rum.

Agricultural products: sugar (1955: 151,229 long tons), cotton, maize, cassava.

Manufactures (1956): rum (1,675,837 wine gal.), molasses.

Barbados, an island east of the Windward group in the West Indies, has been a British possession since 1627; it is believed to have been first visited by the Portuguese. The colony has a nominated Legislative Council and a popularly elected Assembly of 24 members. Under a ministerial system of government inaugurated Feb. 1, 1954, the Prime Minister and 4 other members of the Executive Committee (all 5 being members of the Assembly) exercise executive responsibility for most of the departments of government, except defense and foreign affairs.

The island is very densely populated (about 1,400 per sq. mi.). About 77 per cent of the inhabitants are Negro, 5 per cent white and the remainder of mixed blood. Approximately 70 per cent of the total area is cultivated and half of this is devoted to sugar, which is the staple product; there are sugar and molasses plants and several rum distilleries.

Barbados has an agreeable climate, with temperatures that range between 70° and 86°, rarely below 65°. The cold season (December through May) is also the dry season; average annual rainfall is 60 inches, with September the wettest month.

BERMUDAS—Status: Colony.

Capital: Hamilton (population 3,500).

Governor: Lt. Gen. Sir John Woodall.

Foreign trade (1956): exports, £511,581; re-exports, £4,154,343; imports, £13,159,853 (53% from the U. S.). Chief domestic exports: pharmaceuticals (42%), concentrated essences.

Agricultural products: lily bulbs, potatoes, vegetables, arrowroot.

The Bermudas comprise an archipelago of about 360 small islands, 580 miles east of North Carolina. The largest is (Great) Bermuda or Main Island. Discovered by Juan Bermudez, a shipwrecked Spaniard, early in the 16th century, the islands were settled in 1612 by an offshoot of the Virginia Company and became a Crown colony in 1684. The Governor is assisted by nominated Executive and Legislative Councils and a popularly elected Assembly of 36 members. In 1940, sites on the islands

were leased for 99 years to the U. S. for air and navy bases. Bermuda is also the headquarters of the West Indies and Atlantic squadron of the Royal Navy. The most important factor in the colony's economy is the tourist trade; in 1956, 108,055 persons visited Bermuda. The arable land is devoted to horticulture rather than agriculture and a large selection of vegetables and flowers provide the principal crops. The colony does not approach self-sufficiency and is heavily dependent on food imports.

Bermuda possesses one of the most delightful climates in the world. The mean annual temperature is 71°, with extremes of 49° and 94°. Rainfall averages 58 in. annually.

BRITISH GUIANA—Status: Colony.

Capital: Georgetown (population 97,821).

Governor: Sir Patrick Renison.

Foreign trade (1956): exports (including re-exports), BG\$94,692,256 (40% to Canada, 32% to Britain); imports, BG\$100,159,340 (45% from Britain). Chief exports: sugar (44%), bauxite (31%), rice (10%).

Agricultural products (1956): sugar (263,333 long tons), rice (71,090 tons), copra, coffee, fruit.

Minerals (1956): bauxite (2,480,966 long tons), gold (15,815 oz.), diamonds (29,816 carats).

Forest products: balata, timber.

The only British possession in South America proper, British Guiana is on the northeastern coast between Venezuela and Surinam (Dutch Guiana). Settled by the Dutch in the 17th century, it was occupied by the British in 1796 and ceded to them at the end of the Napoleonic wars. Behind the low plain which contains the farm area is a higher area containing forest and mineral resources. A new Constitution inaugurated Apr. 1, 1953, provided for a bicameral Legislature, with a lower house largely elected under universal adult suffrage, and an Executive Council with a majority of ministers drawn from the lower house on whose advice the Crown-appointed Governor was bound to act. Following charges of Communist infiltration into the government, British military and naval reinforcements were dispatched to the colony; and on Oct. 9, 1953, the Constitution was suspended.

The heterogeneous population included (1955) East Indians, 48.3%; Negroes, 34.8%; mixed, 11.2%; Amerindians, Portuguese and other Europeans, and Chinese.

Forest resources, mostly unexploited, have been estimated at about 40,000,000,000 cu. ft. of merchantable timber. Railway mileage is 110, and highway mileage about 700.

The coastland climate is relatively hot and humid, with average temperatures of

78° in January and 81° in October, and only a slight variation between day and night. Inland temperatures are roughly 3° higher. Rainfall is heavy along the coast—about 88 in. annually at Georgetown.

BRITISH HONDURAS—Status: Colony.

Capital: Belize (population 31,221).

Governor: Sir Colin Thornley.

Foreign trade (1956): exports (including re-exports), BH\$9,973,040; imports, BH\$15,850,630. Chief exports: mahogany (24%), pine.

Agricultural products: bananas, sugar cane, citrus fruits.

Forest products (1956): cedar lumber (696,221 cu. ft.) and logs (3,006 cu. ft.), mahogany lumber (8,143,393 cu. ft.) and logs (52,964 cu. ft.), pine lumber (7,265,172 cu. ft.), chicle (659,100 lb.).

British Honduras is bounded on the north by Mexico and on the west and south by Guatemala. It was settled in 1662 by woodcutters from Jamaica. An irregular form of local government continued until 1871, when it became a Crown colony; it was separated from Jamaica in 1884. The Governor is assisted by an Executive Council and by a partially elected Legislative Assembly.

The colony's economy is dependent upon timber and other forest exports. Agriculture has never been adequately developed. There are no railways, and road development is backward.

Basic internal communications are by river. The Belize river is navigable, at least by light craft, for most of the year as far as the Guatemalan border, the other rivers for much shorter distances.

The extremely heterogeneous population included (1946) creoles (Negroes), 38.3%; mixed, 31%; Amerindians, 16.9%; Caribs, 7%; Europeans, 3.9%; and East Indians, 2.3%.

The climate is subtropical, with maximum recorded temperature of 98°, and minimum of 50°. Rain falls mostly from May to February, and almost continuously from October through December.

Canada

(Member of Commonwealth of Nations)

Area (land only): 3,619,616 square miles.*

Population (est. March 1, 1957): 16,420,000 (1951: British 48%; French 31%; German 4%; Ukrainian 3%; others 14%).

Density per square mile: 4.5.

Ruler: Queen Elizabeth II.

Governor General: Vincent Massey.

Prime Minister: John Diefenbaker.

Principal cities (census 1956)*: Montreal, 1,094,448 (seaport); Toronto, 662,096 (manufacturing center); Vancouver, 361,952 (Pacific seaport); Winnipeg, 256,683 (grain); Hamilton, 237,749 (iron and steel); Edmonton, 224,003 (petroleum); Ottawa, 215,113 (capital); Calgary, 177,861 (farming); Quebec, 166,996 (seaport); Windsor, 120,525 (automobiles).

Monetary unit: Canadian dollar.

Religions (census 1951): Roman Catholic 43%; United Church 20%; Anglican 15%; Presbyterian 6%; Baptist 4%; others 12%.

* Total area, including water: 3,845,774 square miles.

† Preliminary figures.

HISTORY. The Norse explorer Leif Ericsson probably reached the shores of Canada (Labrador or Nova Scotia) in A.D. 1000, but the history of the white man in the country actually began in 1497, when John Cabot, an Italian in the service of Henry VII of England, reached the shore of Newfoundland or Nova Scotia. Canada was taken for France in 1534 by Jacques Cartier. The actual settlement of New France, as it was then called, began in 1604 at Port Royal in what is now Nova Scotia; in 1608 Quebec was founded. France's colonization efforts were not very successful, but French explorers by the end of the 17th century had penetrated beyond the Great Lakes to the western prairies and south along the Mississippi to the Gulf of Mexico. Meanwhile, the English Hudson's Bay Company had been established in 1670. Because of the valuable fisheries and fur trade, a conflict developed between the French and English; in 1713, Newfoundland, Hudson Bay and Nova Scotia (Acadia) were lost to England.

During the Seven Years' War (1756-63), England extended its conquest, and the British general, Wolfe, won his famous victory over Montcalm outside Quebec (Sept. 13, 1759). The Treaty of Paris (1763) put Canada under English control.

At that time the population of Canada was almost entirely French, but in the next few decades thousands of British colonists emigrated to Canada from the British Isles

and from the American colonies. Partly to placate the French who were concentrated in Quebec, Canada was divided into Upper (British) and Lower (French) Canada in 1791. In 1840 the two provinces again were joined under one government, and in 1849 the right of Canada to self-government was recognized. By the British North America Act of 1867, the Dominion of Canada was created through the confederation of Upper and Lower Canada, Nova Scotia and New Brunswick. Prince Edward Island joined the Dominion in 1873. In 1869 Canada had purchased from the Hudson's Bay Company the vast middle west (Rupert's Land) from which the provinces of Manitoba (1870), Alberta and Saskatchewan (1905) were later formed. In 1871 British Columbia joined the Dominion. The country was linked from coast to coast in 1885 by the Canadian Pacific Railway.

During the formative years between 1867 and 1896, the Conservative party led by Sir John A. Macdonald governed the country, except during the years 1873-78. In 1896 the Liberal party took over and under Sir Wilfrid Laurier, an eminent French Canadian, ruled until 1911. In World War I, more than 500,000 Canadian soldiers fought for the Allied cause. After the Treaty of Versailles, Canada, a full-fledged nation, was admitted to the League of Nations and appointed its own representatives in foreign countries. By the Statute of Westminster (1931) the British Dominions, including Canada, were formally declared to be partner nations with Britain, "equal in status, in no way subordinate to each other," and bound together only by allegiance to a common Crown. The Liberal party under W. L. Mackenzie King won the elections in 1935 and was returned to

Canadian Governors General and Prime Ministers Since 1867

Term of office	Governor General	Term	Prime Minister	Party
1867-1869	Viscount Monck	1867-1873	Sir John A. Macdonald	Conservative
1869-1872	Baron Lisgar	1873-1878	Alexander Mackenzie	Liberal
1872-1878	Earl of Dufferin	1878-1891	Sir John A. Macdonald	Conservative
1878-1883	Marquess of Lorne	1891-1892	Sir John J. Abbot	Conservative
1883-1888	Marquess of Lansdowne	1892-1894	Sir John S. D. Thompson	Conservative
1888-1893	Baron Stanley	1894-1896	Sir Mackenzie Bowell	Conservative
1893-1898	Earl of Aberdeen	1896(2 mos)	Sir Charles Tupper	Conservative
1898-1904	Earl of Minto	1896-1911	Sir Wilfrid Laurier	Liberal
1904-1911	Earl Grey	1911-1917	Sir Robert L. Borden	Conservative
1911-1916	Duke of Connaught	1917-1920	Sir Robert L. Borden	Unionist
1916-1921	Duke of Devonshire	1920-1921	Arthur Meighen	Unionist-National, Conservative
1921-1926	Viscount Byng			
1926-1931	Viscount Willingdon	1921-1926	W. L. Mackenzie King	Liberal
1931-1935	Earl of Bessborough	1926(3 mos)	Arthur Meighen	Conservative
1935-1940	Baron Tweedsmuir	1926-1930	W. L. Mackenzie King	Liberal
1940-1946	Earl of Athlone	1930-1935	Richard B. Bennett	Conservative
1946-1952	Viscount Alexander	1935-1948	W. L. Mackenzie King	Liberal
1952-	Vincent Massey	1948-1957	Louis S. St. Laurent	Liberal
		1957-	John Diefenbaker	Conservative

power in 1940 and 1945. Louis S. St. Laurent succeeded King on Nov. 15, 1948, and the Liberals were continued in office in the elections of 1949 and 1953. They lost their majority in the elections of June 10, 1957, and Progressive-Conservative leader John Diefenbaker formed a new government on June 21, 1957.

Newfoundland became Canada's tenth province on March 31, 1949, following a plebiscite held July 22, 1948, in which the people voted by a narrow margin to unite with Canada.

GOVERNMENT AND DEFENSE. Canada, a self-governing member of the Commonwealth of Nations, is a federal union of 10 provinces whose powers are laid down in the British North America Act of 1867. The executive powers nominally rest in the hands of the Governor General, who represents the Queen and is appointed by her upon the recommendation of the Canadian government.

Actually, the Governor General acts only with the advice of the Canadian Prime Minister and the members of the Cabinet, who at the same time sit in the federal Parliament. The Parliament has two houses: a Senate numbering 102 members appointed for life, and a House of Commons numbering 265 members apportioned according to provincial population. Elections are held at least every five years or whenever the party in power is voted down in the House of Commons or considers it expedient to appeal to the people. The Prime Minister is the leader of the majority party in the House of Commons. Laws must be passed by both houses of Parliament and signed by the Governor General in the Queen's name. Results of Parliamentary elections on June 10, 1957, were as follows: Progressive Conservatives, 110; Liberals, 104; Co-operative Commonwealth Federation, 25; Social Credit, 19; Independents and others, 6 (one vacancy).

The members of the Cabinet (June 1957): John Diefenbaker (Prime Minister, External Affairs), Howard Green (Public Works), Donald Fleming (Finance), Alfred J. Brooks (Veterans Affairs), George Hees (Transport), Leon Balcer (Solicitor General), G. R. Pearkes (Defense), Gordon Churchill (Trade and Commerce), E. Davie Fulton (Justice), George Nowlan (National Revenue), D. S. Harkness (Northern Affairs), Ellen Fairclough (Secretary of State), Angus MacLean (Fisheries), Michael Starr (Labor), William M. Hamilton (Postmaster General), James M. Macdonnell (without portfolio), William J. Browne (without portfolio).

The ten provincial governments are nominally headed by Lieutenant Governors appointed by the federal government, but the executive power in each actually is vested in a Cabinet headed by a Prime

PROVINCES AND TERRITORIES

Province	Land area, sq. mi.	Population (Census 1956)
Alberta	248,800	1,123,116
British Columbia	359,279	1,398,464
Manitoba	219,723	850,040
New Brunswick	27,473	554,616
Newfoundland	152,734	415,074
Nova Scotia	20,743	694,717
Ontario	363,282	5,404,933
Prince Edward Island	2,184	99,285
Quebec	523,860	4,628,378
Saskatchewan	237,975	880,665
Territories		
Northwest Territories	1,258,217	19,313
Yukon	205,346	12,190

Provinces	Capital	Prime Minister 1956
Alberta	Edmonton	Ernest C. Manning ¹
British Columbia	Victoria	William Bennett ¹
Manitoba	Winnipeg	D. L. Campbell ²
New Brunswick	Fredericton	Hugh J. Flemming ³
Newfoundland	St. John's	Joseph Smallwood ⁴
Nova Scotia	Halifax	Robert L. Stanfield ³
Ontario	Toronto	Leslie Frost ²
Prince Edward Island	Charlottetown	A. W. Matheson ⁴
Quebec	Quebec	Maurice Duplessis ⁵
Saskatchewan	Regina	T. C. Douglas ⁶
Territories		
Northwest Territories	Ottawa	R. G. Robertson*
Yukon	Whitehorse	F. H. Collins*

¹ Social Credit; ² Liberal-Progressive; ³ Progressive Conservative; ⁴ Liberal; ⁵ Union Nationale; ⁶ Co-operative Commonwealth Federation.

* Commissioner.

Minister, who is leader of the majority party. In nine of the ten provinces the legislature is composed of a one-house assembly elected by the people for 4 years. In Quebec there is a second chamber, the Legislative Council, composed of nominees of the Provincial Government.

Judicial System. The judicial system consists of a Supreme Court in Ottawa (established in 1875), with appellate jurisdiction, and a Supreme Court in each province as well as county courts with limited jurisdiction in most of the provinces. The Governor General in Council appoints the judges of these courts.

Defense. Canadian armed forces, consisting of the Army, Royal Canadian Air Force and the Royal Canadian Navy, are under the Ministry of National Defense. Conscription was in effect during World

War II. Canadian casualties were 104,125, including 41,371 dead.

On Aug. 31, 1955, strength of the army was 47,445; navy, 19,180; air force (June 1, 1955), 49,563. In Dec. 1956 the navy had in active service and reserve one light aircraft carrier, 2 cruisers, 11 destroyers, 53 frigates and escort vessels and numerous ancillary craft.

The Royal Canadian Mounted Police is the constabulary maintained by the federal government. Among its duties are the enforcement of smuggling laws, suppression of traffic in drugs, protection of government buildings and dockyards, and counter-subversive work.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Elementary schools in all provinces except Quebec are free, as is secondary education in most provinces. The supreme education authority in Quebec is a council of public instruction with two aides supervising the Roman Catholic and Protestant schools respectively. In the rest of the provinces the system is non-denominational, and education for the most part is compulsory for all children between the ages of 8 and 14. Of Canada's 28 universities, 7 are state-controlled and 21 are independent of provincial control. Leading universities are Toronto, which belongs to the first group, and McGill (Montreal), which belongs to the second group.

Agriculture. Agriculture, including horticulture, fruit-growing and the raising of stock and poultry, is the largest single industry. Canada is one of the world's greatest wheat-exporting countries; production is concentrated in Manitoba, Saskatchewan and Alberta. The estimated value of field crops in 1956 was \$1,750,000,-000 (preliminary).

Stock raising and dairy farming have grown greatly since 1920. Ontario and Quebec are the most important dairying provinces. On June 1, 1956, Canada had 10,465,000 cattle, 5,680,000 hogs, 1,706,000 sheep and 851,500 horses. Dairy production in 1956 included butter, 150,836 short tons; milk, 8,651,541 tons; cheese (cheddar), 42,461 tons. Wool production in 1956 was 8,079,000 pounds, greasy basis.

Industry. Canadian manufactures rely mainly on domestic raw materials; growing industries which depend largely on materials imported in a raw or semi-finished state include the manufacture of automobiles, sugar and rubber goods as well as the iron and steel industry in Nova Scotia, Quebec and Ontario. The latter two provinces account for more than 80 per cent of all manufactures. The abundance of cheap water power is one of the chief factors in the growth of Canadian indus-

try. Production of steel ingots and castings in 1956 was 5,305,805 short tons; pig iron, 3,568,196 tons. In 1955 the value of factory shipments was \$19,469,013,000 (preliminary); in 1954 there were 38,028 plants which employed 1,267,966 persons. The most important industries by value of output were pulp and paper, nonferrous-metals smelting and refining, petroleum products, meatpacking, motor vehicles and sawmill products. Production of motor vehicles totalled 470,674 in 1956 (preliminary).

Trade. Canada is one of the great trading nations of the world. The bulk of its foreign commerce is in raw or semi-finished products.

Trade statistics (in millions of Canadian dollars):

Year	Imports	Exports	Re-exports
1952	4,030.5	4,301.1	54.9
1953	4,382.8	4,117.4	55.2
1954	4,093.2	3,881.3	65.6
1955	4,712.4	4,281.8	69.5
1956	5,710.4	4,789.5	73.4

In 1956, Canada's principal customers were the U. S. (59%), Britain (17%), western Germany (2.9%), Japan (2.7%) and Union of South Africa (1.4%). Leading suppliers were the U. S. (73%), Britain (8.5%), Venezuela (3.6%), western Germany (1.6%) and Japan (1.1%). Leading exports were newsprint (15%), wheat (11%), planks and boards (6.8%), wood pulp (6.3%) and aluminum and products (5.0%). Leading imports in 1955 were machinery (non-farm) (9%), automobile parts (5%), crude petroleum (5%), farm implements and machinery (4%) and petroleum products (3%).

CROP ACREAGE AND PRODUCTION

(In thousands, provisional figures)

	Acres		Bushels	
	1955	1956	1955	1956
Wheat	21,506	21,340	494,140	537,796
Oats	11,178	11,972	407,783	535,394
Barley	9,933	8,722	252,410	277,782
Rye	780	557	14,754	8,599
Corn	507	439	31,510	23,918
Potatoes	308	303	66,035	66,815

Communications. Because Canada's exports are to a large extent bulky raw materials, cheap water transportation is essential. The country's system of canals, especially those connecting the Great Lakes, forms an integral part of the inland communications system. Canal traffic amounted to 40,015,625 short tons in 1956; 23,066,261 tons of freight were carried through the Welland Canal alone.

Railway facilities have been improved in relation to the export of wheat from the prairie provinces and to the development of the mineral and wood pulp industries in northern Quebec and northern Ontario.

About 90 per cent of the railway mileage of 43,000 (main-line track) is under the control of two systems, the government-owned Canadian National and the privately-owned Canadian Pacific. Canada's principal merchant marine lines are the Canadian Pacific, which operates a subsidiary ocean steamship company, and the Canadian National, which has minor steamship lines under its control. The merchant marine on Dec. 31, 1956, numbered 2,656 vessels (100 tons and over) with gross tonnage of 2,110,565.

On Dec. 31, 1954, Canada had 524,055 mi. of highways, of which 192,616 mi. were surfaced.

Trans-Canada Air Lines, established in 1937, is controlled by the federal government. In 1956, Canadian airlines carried 3,815,679 revenue passengers and flew 1,547,666,225 passenger-miles. On Jan. 1, 1956, Canada had 4,149,300 telephones.

Finance. Recent data are as follows (in millions of Canadian dollars):

	1955-56	1956-57*	1957-58†
Revenue	4,400.0	5,149.1	5,170.0
Expenditure	4,433.1	4,866.6	5,018.0

* Provisional. † Budget estimate.

The net public debt (gross debt less active assets) on Mar. 31, 1957, was reported at \$10,997,900,000 (preliminary), compared to \$11,280,400,000 on Mar. 31, 1956, \$11,263,100,000 on Mar. 31, 1955, \$11,151,600,000 on Mar. 31, 1954, and \$3,648,691,449 on Mar. 31, 1941.

NATURAL FEATURES AND RESOURCES;

CLIMATE. Covering most of the northern part of the North American continent and with an area larger than that of the United States, Canada's topography is extremely diversified. The northeastern region, including most of Quebec, northern Ontario and Manitoba, and the Northwest Territories, with Hudson Bay in the center, is an important source of minerals, wood pulp and water power. In the east the mountainous maritime provinces have an irregular coast line on the Gulf of St. Lawrence and the Atlantic. The St. Lawrence plain, covering most of southern Quebec and Ontario, and the interior continental plain, covering southern Manitoba and Saskatchewan and most of Alberta, are the principal cultivable areas. They are separated by a forested plateau rising from Lakes Superior and Huron. Westward toward the Pacific, most of British Columbia, Yukon, and part of western Alberta are covered by parallel mountain ranges including the Rockies. The Pacific border of the coast range is ragged with fiords and channels. The highest point in Canada is Mt. Logan, 19,850 ft., located in the Yukon.

Canada has an abundance of large and small lakes. In addition to the Great Lakes

on the United States border, there are nine others which are more than 100 miles long and 35 which are more than 50 miles long.

The two principal river systems are the Mackenzie and the St. Lawrence. The St. Lawrence with its tributaries is navigable for over 1,900 miles and is the commercial artery of eastern Canada.

As most of the Canadian rivers have waterfalls on their courses they are of considerable importance as sources of power. Average monthly production of electricity in 1956 was 6,807,000,000 kwh.

Minerals. Canada's mineral resources are both rich and varied. Mining production in 1956 was valued at \$2,067,699,096. Metals

MAJOR MINERALS

	1955	1956*
Asbestos (tons)	1,063,802	1,038,975
Coal (tons)	14,818,880	14,915,033
Copper (lb.)	651,987,423	706,585,547
Gold (oz.)	4,541,962	4,378,862
Iron ore (tons)	16,283,177	22,526,311
Lead (lb.)	405,525,038	373,349,541
Nickel (lb.)	349,856,997	355,986,460
Petroleum (bbl.)	129,440,247	170,569,200
Silver (oz.)	27,984,204	28,794,573
Zinc (lb.)	866,714,038	847,239,825

* Provisional.

come mainly from two widely separated regions, the mountain ranges of the Pacific coast and the province of Ontario. Copper ore also exists in Quebec, Manitoba and Newfoundland. Production of petroleum centers in Alberta. There are important deposits of uranium in the Northwest Territories.

Forests and Fisheries. The total area of land covered by forests is estimated at 1,300,000 square miles, of which only 435,000 are productive and accessible. Production of sawn lumber was estimated at 7,751,375,000 bd. ft. in 1956. The manufacture of pulp and paper is one of the leading industries. Wood pulp production in 1956 was estimated at 10,743,605 short tons. Newsprint production was estimated at 6,468,815 tons; exports were 5,967,194 tons, of which 5,218,911 tons went to the U. S.

Fishing, Canada's oldest industry, is carried on along the Atlantic and Pacific coasts and on the inland lakes. The most important fish are salmon, cod, herring, mackerel, lobsters, sardines, halibut, haddock, whitefish and trout. The total value of fishery production in 1955 (excluding Newfoundland) was \$181,129,000; the catch totaled 19,141,640 cwt.

Climate. Canada has great variations of climate. South of the Gulf of St. Lawrence, the maritime provinces have an average temperature of 40° for the year and over 60° for the summer months. In Quebec and northern Ontario the winters are cold

and the summers average from 60° to 65°. In southern Ontario the average summer temperature is 65°, with an occasional rise to 90°. The prairie provinces have a distinctly continental climate with comparatively short warm summers and long cold winters. The west coast has a climate similar to that of the southern coast of England. Northwest and northeast of Hudson Bay the climate is too severe for trees.

FALKLAND ISLANDS AND DEPENDENCIES—Status: Crown Colony.

Governor: Edwin P. Arrowsmith.

Capital: Stanley (population 1,135).

Foreign trade (1956): exports, £4,956,000; imports, £3,276,000. Chief export: whale oil.

This sparsely inhabited Crown colony consists of a group of islands in the south Atlantic about 250 miles east of the South American mainland. Dependencies include all islands and Antarctic territory between 20° and 50° w. long., south of 50° s. lat., and between 50° and 80° w. long., south of 58° s. lat. The chief industry is sheep raising, and apart from the production of wool, hides and skins and tallow, there are no known resources. The whaling industry is carried on successfully from South Georgia Island; 185,739 barrels of whale oil were exported in 1955.

The islands were discovered by John Davis in 1592. East Falkland Island was claimed for France in 1764, and West Falkland Island for Britain the following year. The French settlement later passed to Spain, and in 1829 was colonized by Argentina. The Argentines were ejected by the British in 1833 and have since reasserted their claim to the islands many times. In 1914 the Battle of Falkland Islands was fought nearby, resulting in a British victory.

The climate is equable though relatively cold, with temperatures averaging about 47° in midsummer and 37° in midwinter.

JAMAICA AND DEPENDENCIES—Status: Colony.

Capital: Kingston (population 145,000).

Governor: Sir Hugh Foot.

Chief Minister: Norman W. Manley.

Foreign trade (1956)*: exports, £36,906,313 (49% to Britain); re-exports, £1,149,813; imports, £58,312,189 (37% from Britain). Chief exports: sugar and preparations (34%), bananas (14%), bauxite (12%).

Agricultural products (1956): sugar (356,000 long tons), rum (2,087,450 gal.), bananas, citrus fruits, ginger, coffee, pimento.

Mineral: bauxite (1956: 3,545,877 long tons).

* Excluding dependencies.

Jamaica, the largest island in the British West Indies (4,470 sq. mi.), is eighty miles south of the eastern end of Cuba. Its island dependencies include the Turks and

Caicos Islands (about 600 mi. N.E.), Cayman Islands (about 300 mi. N.W.) and two uninhabited cays. It was discovered by Columbus in 1494 and remained in Spanish possession until 1655, when it was taken by the British. According to the Constitution of Nov. 20, 1944, as amended in 1953, the Governor is assisted by a House of Representatives of 32 popularly elected members; a Legislative Council (upper house) of 15 members and an Executive Council of 10 members, of whom the Chief Minister is appointed by the Governor subject to the approval of the House.

Sites were leased for 99 years to the U. S. in 1940 for naval and air bases.

The population includes Negro, 77.7%; mixed, 18.6%; East Indian, white and Chinese.

The colony's economy depends on agriculture, and about 200,000 acres are under cultivation. Sugar took the place of bananas as the chief crop during World War II. Jamaica is virtually the sole source of pimento.

Jamaica's favorable climate makes it attractive to tourists. Temperatures at Kingston range from about 71° to 88°, but are considerably cooler inland. The rainy seasons are in May and October; total fall is about 65 inches a year (33 at Kingston).

LEEWARD ISLANDS—Status: Group of colonies.

Seat of governor: St. John's (Antigua) (population 11,000).

Governor: Alexander T. Williams.

Foreign trade (1955): exports, £3,040,000; imports, £4,520,000. Chief export: sugar.

Agricultural products: sugar, cotton, coconuts, citrus fruits, tobacco.

The Leeward Islands, lying southeast of Puerto Rico, are a group of four colonies—Antigua (108 sq. mi.) and dependencies (63 sq. mi.); Virgin Islands (67 sq. mi.); St. Kitts (68 sq. mi.) and Nevis (50 sq. mi.) and dependency (34 sq. mi.); and Montserrat (33 sq. mi.). They have a common governor but their governments are otherwise separate. They were federated between 1871 and 1956.

In 1940, the U. S. acquired a 99-year lease on sites for a naval and air base on Antigua. The islands are agricultural.

Temperatures average about 76° in January and 81° in August.

TRINIDAD AND TOBAGO—Status: Colony.

Capital: Port of Spain (population 120,000).

Governor: Sir Edward Beetham.

Chief Minister: Eric Williams.

Foreign trade (1956): exports (including re-exports), BWIS\$330,449,366 (35% to Britain); imports, BWIS\$301,810,430 (35% from Britain). Chief exports: crude petroleum

and products (66%), sugar (8%), cacao (3%).

Agricultural products: raw sugar (1956: 160,600 long tons), cacao, coconuts, citrus fruit.

Manufactures: petroleum products (1956: 43,678,644 bbl.).

Minerals (1956): crude petroleum (28,929,000 bbl.), asphalt (141,127 long tons).

The islands of Trinidad and Tobago are 16 and 21 miles, respectively, off Venezuela just north of the Orinoco delta. Both were discovered by Columbus in 1498, and remained Spanish possessions until 1797, when the British took them. They are administered by a Governor, assisted by an Executive Council of 11 members, of whom 8, including the chief minister, are elected by the Legislative Council, 24 of whose 31 members are popularly elected. In 1941 the United States was granted 99-year leases on the islands for naval and air bases covering a total of 25,000 acres.

The soil is rich for the growing of tropical products; sugar and cacao are the principal crops. Trinidad is one of the leading oil producers of the Commonwealth, and the world's most notable source of asphalt, found in Pitch Lake, thirty-eight miles southeast of Port of Spain. Port of Spain is the chief port, and a transshipment point for Orinoco trade. There are several oil refineries. About half of the population is Negro, a third East Indian, and the rest mixed and white.

Trinidad's climate is tropical, with a mean annual temperature of 80°. The rainy season is from May to January (except October). Total annual rainfall is about 65 inches at Port of Spain and varies from 50 to 120 inches elsewhere throughout the colony.

WINDWARD ISLANDS—Status: Group of colonies.

Seat of governor: St. George's (Grenada) (population 5,775).

Governor: Sir Colville M. Deverell.

Foreign trade (1955): exports, \$4,110,000; imports, \$5,390,000.

Agricultural products: arrowroot (St. Vincent), nutmeg (Grenada), mace (Grenada), cacao.

These islands, four in number, form the southern portion of the Lesser Antilles in the Caribbean; they extend approximately 250 miles from the French colony of Guadeloupe on the north to the British colony of Trinidad on the south. Their total area of about 820 square miles divides as follows: Dominica, 304; St. Lucia, 233; St. Vincent, 150; Grenada, 133. The four colonies are not federated and have no common legislature or laws, although they do have a common Governor.

More than two-thirds of the inhabitants are Negroes, nearly one-third mulatto, and about 2 per cent white. Agriculture is the

only industry. St. Vincent has a virtual monopoly on the world supply of arrowroot, and Grenada furnishes about 40 per cent of the world's nutmeg.

Climate is pleasant, although rainfall is heavy, particularly in summer, amounting in places to as much as 200 inches a year (80 at St. George's). The temperature in January averages 77°, in September, 80°.

ASIA

ADEN—Status: Colony and Protectorate. Governor: Sir William Luce.

Foreign trade (1956): exports and re-exports, £44,890,048 (16% to Britain); ships' stores and bunkers, £19,565,875; imports, £71,227,903 (30% from Kuwait).

Manufactures (1956): crude petroleum refined (throughput), 4,615,000 long tons.

The British colony and protectorate of Aden is situated on the volcanic southern tip of the Arabian peninsula, along the Gulf of Aden. The colony (port) of Aden was annexed to Britain in 1839 and was part of the Bombay Presidency until 1932, when it became a separate province with the Chief Commissioner responsible to the Indian government. In 1937 it was transferred from Indian to Imperial control as a Crown colony. It is administered by a Governor and Commander in Chief aided by an Executive Council and a Legislative Council. The 20-odd Sultans who rule their respective territories in the protectorate are responsible to him.

The island of Perim (5 sq. mi.), the Kuria Muria islands, and the island of Kamaran (22 sq. mi.) are attached administratively to Aden.

Aden colony is essentially a transshipment point and bunkering station and is also the commercial center for the Yemen and the African coast opposite. Aden airport is a station on the Khartoum-Karachi air route. Agriculture is unimportant except for some coffee and tobacco, and except for the large petroleum refinery of the British Petroleum Co. Ltd. (formerly Anglo-Iranian Oil Co.), which went into operation in 1954, manufacturing activity is limited to salt, cigarettes and dhow. Delivery of fuel oil to ships totalled 2,514,938 long tons in 1956.

BAHREIN ISLANDS—Status: Protectorate and Sheikdom.

Capital: Manama (population 45,000).

Ruler: Sheik Sir Salman bin Hamad al Khalifah.

British Political Agent: C. A. Gault.

These islands form an archipelago off Arabia's east coast and are nominally an independent sheikdom, but are actually a protectorate of Great Britain, which is represented by a Political Agent. The islands are the center of the Persian Gulf pearl fisheries and the site of an airport on the London-Australia route. The con-

cession for exploitation of petroleum deposits, discovered in 1932, is held by an affiliate of U. S.-owned interests. Output in 1956 was 11,013,702 barrels. Production at the Bahrain refinery in the same year was 71,717,275 barrels. Agriculture is of some importance. Most of the trade of the Saudi Arabian provinces of Nejd and Hasa pass through Bahrain. Chief exports are rice, cotton goods, pearls, coffee and tea.

BORNEO

COLONY OF NORTH BORNEO—Status: Colony.

Capital: Jesselton (population 11,704). Governor: Sir Evelyn Turnbull. Foreign trade (1956)*: exports, Mal.\$120,-875,275 (23% to Britain); imports, Mal.\$117,448,914 (24% from Britain). Chief exports: rubber (33%), timber (22%), copra (19%).

Agricultural products: rubber (exports 1956: 19,859 long tons), rice, copra.

Forest products: timber, cutch, rattans.

* Excluding transit trade.

The Colony of North Borneo, constituting the extreme northern portion of the island of Borneo, consists largely of highlands and occasional open valleys and plateaus. The territory was a British protectorate administered under a royal charter by the British North Borneo Company from 1881 until July 15, 1946, when it assumed the status of a Crown colony. It was occupied by Japanese troops from 1942 until 1945. Labuan (pop. 9,000; area, 35 sq. mi.), a small island off the North Borneo coast, was transferred from the jurisdiction of the Straits Settlements to that of North Borneo in 1946.

The population is comprised largely of aboriginal tribesmen living on a very primitive level of culture and social organization. In 1951, 72.7% of the population was native, 22.3% Chinese; there were 1,213 Europeans. Mineral resources are believed to be considerable, but the colony's income is based on agricultural and jungle produce.

The climate of North Borneo is tropical, with a mean annual temperature range of only 3°, although extremes of 64° and 91° have been recorded. The total rainfall varies between 60 and 180 inches annually and is heaviest in the last three months.

BRUNEI—Status: Protectorate.

Capital: Brunei (population 11,000).

Sultan: Omar Ali Saifuddin.

British Resident: J. O. Gilbert.

Foreign trade (1956): exports, Mal.\$314,-260,724; imports, Mal.\$114,083,317. Chief export: petroleum (99%).

Agricultural products: rice, rubber.

Mineral: petroleum (1956: 42,000,000 barrels).

Brunei lies on the northwestern coast of Borneo, entirely surrounded by Sarawak. It was placed under British protection in

1888, and in 1906 a treaty was concluded whereby the native Sultan yielded administration of the state to a British Resident. The Governor of Sarawak was appointed High Commissioner for Brunei in 1948. Japanese occupied Brunei in 1942-45.

Most of the inhabitants are Malays and Borneans; in 1955, 19% were Chinese and only 1.5% European. The bulk of the population lives in and around the capital, situated on the Brunei River 9 miles from its mouth. The interior is largely forested and contains rich timber. All petroleum is exported to Sarawak for refining.

Brunei's climate is comparable to that of North Borneo, except that the wet season is longer, often lasting until March.

SARAWAK—Status: Colony.

Capital: Kuching (population 60,000).

Governor: Sir Anthony F. Abell.

Foreign trade (1956): exports, Mal.\$487,-000,860; imports, Mal.\$463,886,635. Chief exports: petroleum and products (73%), rubber (14%), pepper (5%).

Agricultural products: rubber (exports 1956: 41,234 long tons), pepper (19,818 tons), copra, rice.

Minerals: petroleum, gold, silver, coal.

Sarawak extends along the northwestern coast of Borneo for about 500 miles. In 1841 part of the present territory was granted by the Sultan of Brunei to Sir James Brooke. The state, enlarged by additional concessions made between 1861 and 1905, continued to be ruled by members of the Brooke family until the Japanese occupation in Dec. 1941. A British protectorate since 1888, Sarawak became a Crown colony July 15, 1946, through agreement between the British government and the then ruling Rajah, Sir Charles Vyner Brooke.

The colony is mountainous and well watered; inland communication is largely by water. Most of the inhabitants are Malays, Dyaks and Chinese. The most important mineral is petroleum, which was discovered at Miri in 1909 and subsequently worked by Sarawak Oilfields, Ltd. A large proportion of the petroleum exports reflects petroleum imported from Brunei and refined in Sarawak. There are also important forest resources. Under the enlightened rule of the Brookes, Sarawak became a highly organized community.

Sarawak's climate is healthful; the temperature seldom rises above 90° and falls to 70° at night. Average annual rainfall at Kuching is 160 inches.

Ceylon

(Member of Commonwealth of Nations)

Area: 25,332 square miles.

Population (est. July 1, 1956): 8,929,000 (1953: Sinhalese, 69%; Tamil, 21%; Moors,

6%; Burghers and Eurasians, .5%; Europeans [6,909] and others, 3.5%).

Density per square mile: 352.5.

Ruler: Queen Elizabeth II.

Governor General: Sir Oliver Goonetilleke.

Prime Minister: S.W.R.D. Bandaranaike.

Principal cities (census 1953): Colombo, 423,481 (capital); Dehiwala—Mt. Lavinia, 80,086 (suburb of Colombo); Jaffna, 77,218 (fibers, tobacco).

Monetary unit: Ceylonese rupee.

Languages: English, Sinhalese, Tamil.

Religious (est.): Buddhist, 61%; Hindu, 22%; Moslem, 7%; Christian (mainly Roman Catholic), 9%; others, 1%.

HISTORY. The island of Ceylon lies in the Indian Ocean 12 miles southeast of the southern tip of India. Known to the Greeks and Romans as Taprobane and to Mohammedan seamen as Serendib, it is reputed to have been invaded from India in 504 B.C. by Vijaya, the first Sinhalese King. Buddhism was introduced in the third century B.C. In subsequent centuries the island was invaded and occupied several times by Indian princes.

Ceylon was visited in 1505 by the Portuguese, who found the island divided into seven native kingdoms. The Portuguese settlers were ousted in the middle of the 17th century by the Dutch, who in turn were defeated by an English force in 1796. Ceylon became a Crown colony in 1796, and was formally ceded to England by the treaty of Amiens in 1802.

The Donoughmore Constitution of 1931 vested control over most local affairs in a State Council, which had an elected majority. The arrangement proved generally unacceptable, and after World War II a commission which was headed by Lord Soulbury drafted another Constitution. The Ceylon Independence Act received royal assent on Dec. 10, 1947, and on Feb. 4, 1948, Ceylon became a full-fledged, self-governing dominion, with Stephen Senanayake as Prime Minister. On his death, Mar. 22, 1952, his son Dudley took office. The latter resigned on account of ill health on Oct. 12, 1953, and was succeeded by Sir John Kotelawala. The leftist People's United Front won the April 1956 elections and its leader, S.W.R.D. Bandaranaike, formed a new government on April 12.

GOVERNMENT. Under the 1946 Constitution, Ceylon's government is headed by the Crown-appointed Governor General, who is advised by a Council of Ministers headed by the Prime Minister. The bicameral Parliament consists of a House of Representatives of 101 members (95 elected by full adult suffrage), and a Senate composed of 15 elected and 15 appointed members.

Elections of April 1956 returned to the House of Representatives 51 People's United Front, 14 Socialists, 10 Federalists,

8 United Nationalists, 3 Communists and 9 others.

The 1947 defense agreement permits the stationing of British troops on the island. The Royal Navy base at Trincomalee and the R.A.F. station at Katunayake reverted to Ceylon in 1957.

SOCIAL AND ECONOMIC CONDITIONS. Free education is available in public schools from kindergarten to university. The illiteracy rate in 1953 (5 years and over) was 34.2%. In 1956 there were 6,187 Sinhalese and Tamil schools with 1,372,752 pupils and 657 English schools with 321,127 pupils. The University of Ceylon (founded in 1942) had 2,429 students in 1955-56.

Ceylon is heavily dependent on food imports, particularly rice, the staple food. A large part of the cultivated land (25% of the total area) is devoted to the chief export crops—tea (1956: 375,577,652 lb.), rubber (1956: 95,383 long tons) and coconut products, all of which are grown for the most part on plantations. Other crops include rice (1956: 26,900,000 bu. paddy), fruits, cinnamon and citronella. In 1956 there were 1,450,156 cattle, 789,521 buffalo and 471,298 goats.

Recent foreign-trade data are as follows (in millions of Ceylonese rupees):

	1954	1955	1956
Exports	1,809	1,940	1,735
Imports	1,397	1,460	1,629

Leading exports in 1956 were tea (60%), rubber (16%) and coconut oil (6%). Leading customers were Britain (29%), China (10%) and the U. S. (8%); leading suppliers, Britain (21%), India (13%) and Burma (9%).

Ceylon is well served by highways and the government railway, which total about 19,000 and 895 miles, respectively. A fast ferry connects railheads in India and Ceylon.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of the island is flat, but mountains in the south rise to 8,000 feet. The island extends to a maximum of 270 miles north and south, and 140 miles east and west. There are numerous rivers, the longest of which is the Mahaweli-Ganga (206 miles).

Mineral resources include graphite (plumbago) (1956 exports: 9,162 long tons), gem stones, mica, magnesite and vanadium; uranium deposits have been reported.

A distinctive feature of Ceylon's climate is the monsoon, which appears in May and in October–November. Annual rainfall varies from 40 inches in the northeast to more than 200 in the southwest. The mean annual temperature at Colombo is 80.5°.

CYPRUS—Status: Colony.

Capital: Nicosia (pop. 1956: 49,000).

Governor: Field Marshal Sir John Harding.

Foreign trade (1956): exports, £20,946,-243 (34% to western Germany); re-exports, £1,405,242; imports, £39,097,303 (45% from Britain). Chief exports: cupreous concentrates (32%), pyrites (27%).

Agricultural products: barley, wheat, potatoes, wine, fruit.

Minerals: copper ore (concentrates), pyrite ore.

Cyprus, third largest island in the Mediterranean, is roughly equidistant from Asia Minor to the north and Syria to the east. The site of early Phoenician and Greek colonies, it passed in 1571 from the rule of Venice to that of the Ottoman Empire, under which it remained until 1878, when it was ceded to Great Britain for administrative purposes. On the outbreak of hostilities with Turkey in World War I (Nov. 5, 1914), the island was formally annexed to Great Britain.

The Governor is advised by a nominated Executive Council, but he alone possesses the lawmaking power.

Demands for self-determination and union with Greece, marked by terrorism, became a major problem in 1955-56.

The people are mainly Greeks (80.8% by the last census—1946) and Turks (17.7%), although there is an Armenian colony and a small Latin colony. More than 80 per cent of the population is Christian. Agriculture is the principal industry. Sponge fishing is also important, as well as copper mining.

The mean annual temperature is about 69°; annual rainfall averages about 19 inches.

HONG KONG—Status: Colony.

Capital: Victoria (population 1,000,000).

Governor: Sir Robert Blank.

Foreign trade (1956): exports, HK\$3,210,-000,000; imports, HK\$4,566,000,000. Chief export: textiles.

Agricultural products: rice, sugar cane.

Major industries: shipbuilding, rope making, cement, sugar refining, textiles.

The colony of Hong Kong comprises the island of Hong Kong (32 sq. mi.), Stonecutters' Island, and the Kowloon peninsula and the New Territories on the adjoining mainland. The island of Hong Kong, located at the mouth of the Canton River about 90 miles southeast of Canton, was ceded to Britain in 1841.

Stonecutters' Island and Kowloon were annexed in 1860, and the New Territories, which are mainly agricultural lands, were leased from China in 1898 for 99 years. Hong Kong was attacked by Japanese troops Dec. 7, 1941, and surrendered the following Christmas Day. It remained under the occupation of the Japanese until Sept., 1945.

Possessing an excellent natural harbor

17 miles in extent, the only safe deep-sea anchorage between Shanghai and Indo-China, Hong Kong is the entrepôt for trade throughout southern China and the western Pacific.

The cities of Victoria and Kowloon contain the greater part of the population, which is overwhelmingly Chinese. Besides those Chinese engaged in agriculture or industry, a large population lives in sampans or junks either in Victoria Harbour or neighboring bays, supporting itself by fishing or by laboring on the wharves.

Hong Kong has an agreeable climate, although violent typhoons sometimes descend upon the Colony. The average annual temperature is 72°, ranging from 59° in February to 82° in July. Rainfall is about 85 inches a year.

Federation of Malaya

(Persekutuan Tanah Melayu)

(Member of Commonwealth of Nations)

Area: 50,690 square miles.

Population (est. June 30, 1955): 6,058,317 (1947: Malayan, 49.5%; Chinese, 38.4%; Indian and Pakistani, 10.8%; others, 1.3%).

Density per square mile: 119.5.

Head of State: Sir Abdul Rahman.

Prime Minister: Tengku Abdul Rahman.

Principal cities (census 1947): George Town, 189,068 (seaport); Kuala Lumpur, 175,961 (capital); Ipoh, 80,894 (tin); Malacca, 54,507 (seaport, rubber, copra).

Monetary unit: Malayan dollar.

Languages: English, Malay, Chinese, Tamil.

Religions: Moslems (predominant), Christian, Buddhist.

The Federation of Malaya consists of the states of Johore, Kedah, Kelantan, Negri Sembilan, Pahang, Perak, Perlis, Selangor and Trengganu and the former British settlements (crown colonies) of Malacca and Penang. The native states were brought under British administration by a process of commercial and political exploitation in the late 19th and early 20th centuries. Japanese troops invaded the Malayan States in Dec. 1941, and captured Singapore Feb. 15, 1942. British control was restored upon the Japanese surrender and the Federation was established in 1948. For several years thereafter Communist-led guerrillas caused widespread unrest and a large force of British and other troops had to be stationed in the area.

As the result of agreements reached with the British government in 1956 and 1957, the Federation attained full independence within the Commonwealth on August 31, 1957. Sir Abdul Rahman was elected the first head of state, and Tengku Abdul Rahman (no relation) became prime minister.

Under the 1957 constitution Malaya is a

sovereign constitutional monarchy within the Commonwealth of Nations, recognizing the Queen as head of the Commonwealth. The head of state is elected by the rulers of the states from among themselves for a 5-year term. He is advised by the prime minister and his cabinet. Parliament consists of a senate and house of representatives, but pending elections scheduled for 1959 the present legislative council continues in office. Each state has a constitutional government headed by a hereditary ruler except for Malacca and Penang, the governors of which are appointed by the head of state.

About 65% of the cultivated area is devoted to rubber, of which Malaya is one of the world's largest producers (production 1956: 626,000 long tons). Other export crops include coconuts and coconut oil, tea and pineapples. Production of rice, the principal subsistence crop, falls far short of meeting local requirements.

Recent trade statistics are as follows (in millions of Malayan dollars and including Singapore):

	1954	1955	1956
Exports	2,986	4,156	4,166
Imports	3,139	3,822	4,153

Leading customers in 1956 were Britain (17%), the U. S. (15%) and Japan (8%); leading suppliers, Indonesia (28%), Britain (18%) and Thailand (7%). Leading exports in 1955 were rubber (56%) and tin (10%).

Malaya is rich in minerals. Tin, the most important, occurs throughout the country but production (1956: 62,300 long tons) is concentrated in Perak and Selangor. Other minerals include iron ore (1956: 2,445,000 tons), coal (182,000 tons), bauxite (264,000 tons), tungsten and manganese ore.

Malaya is divided into two unequal parts by a range of mountains about 300 mi. in length, east of which lies the greater part of the country. About 80% is covered by dense tropical forest. The climate is marked by very heavy rainfall, high humidity and uniformly high temperatures.

SINGAPORE—Status: Colony.

Capital: Singapore (population 1947: 441,885).

Commissioner General in Southeast Asia: Sir Robert Scott.

Governor: W. A. C. Goode.

Chief Minister: Lim Yew Hock.

Foreign trade: see Federation of Malaya.

Singapore, founded in 1819 by Sir Stamford Raffles, comprises the island of Singapore and adjacent islets. It became a separate Crown colony of Great Britain on Apr. 1, 1946, when the former colony of the Straits Settlements was dissolved. Penang and Malacca were transferred to the Malayan Union, and the small island of Labuan to North Borneo. The Cocos or Keeling Islands were transferred to Aus-

tralian control in 1951 and Christmas Island in 1957. Singapore was scheduled to be granted full internal self-government in 1958.

Under its 1955 Constitution, Singapore has a Legislative Assembly of 32, 25 of whom are directly elected, and a Council of Ministers responsible to the Assembly. The Governor's reserved powers include foreign affairs, defense and internal security.

The Commissioner General in Southeast Asia is charged with the coordination of administration in the Malayan Federation, Singapore, Sarawak, North Borneo and Brunei.

The basis of Singapore's prosperity is its entrepôt trade. It handles a large part of the export trade of Malaya, from which it is separated only by the narrow Straits of Johore, and also conducts a large volume of trade with Indonesia. Singapore has an excellent natural harbor and is the principal British naval base in the Far East. About 78% of the population is Chinese and 12% Malayan.

The climate of Singapore is hot and humid, with practically no seasonal change; mean average temperature is 80°. The total yearly rainfall is about 95 inches.

India (Republic)

(Member of Commonwealth of Nations)

Area: 1,265,763 square miles.*

Population (est. 1955): 381,690,000* (Hindu, 85%; Moslem, 9.9%; Christian, 2.3%; Sikh, 1.7%; others [Jain, Buddhist, Zoroastrian, Jewish, etc.], 1.1%).

Density per square mile: 301.6.

President: Rajendra Prasad.

Prime Minister: Pandit Jawaharlal Nehru.

Principal cities (census 1951): Bombay, 2,839,270 (seaport; cotton and textiles); Calcutta, 2,548,677 (chief port); Madras, 1,416,056 (seaport); Hyderabad, 1,085,722 (trade center); Delhi, 914,973 (manufacturing); Ahmedabad, 788,333 (manufacturing); Bangalore, 778,977 (manufacturing); Kanpur (Cawnpore), 705,383 (textiles); New Delhi, 276,314 (capital).

Monetary unit: Rupee.

Principal languages: Hindi (official), English†, Bengali, Assamese, Gujarati, Kannada, Kashmiri, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Tamil, Telugu, Urdu.

* Including Jammu and Kashmir; status in dispute with Pakistan. † To be used for all official purposes until 1965.

HISTORY. The Republic of India is one of the largest, richest and most populous nations in the world. A sovereign republic within the Commonwealth of Nations, it contains most of pre-1947 India's industrial wealth and natural resources.

The Aryans or Hindus who invaded India between 2400 and 1500 B.C. from the northwest found a land already well civilized. Buddhism was founded in the 6th

century B.C. and spread through northern India. The first exact date in Indian history is 327 B.C., when Alexander the Great invaded India. Meanwhile India continued to be divided into rival states.

In 1526, Mohammedan invaders founded the great Mogul empire, centered on Delhi, which lasted at least in name until 1857. Akbar the Great (1542-1605) strengthened this empire and became the ruler of a greater portion of India than had ever before acknowledged the suzerainty of one man. The long reign of his great-grandson, Aurangzeb (1658-1707) represents both the culmination of Mogul power and the beginning of its decay.

Vasco da Gama, the Portuguese explorer, visited India first in 1498, and for the next hundred years the Portuguese had a virtual monopoly on trade with the subcontinent. Meanwhile, the English founded the East India Company, which set up its first factory at Surat in 1612 and began expanding its influence, fighting against the Indian rulers and the French, Dutch and Portuguese traders simultaneously.

Bombay, taken from the Portuguese, became the seat of English rule in 1687. The defeat of French and Moslem armies by Lord Clive in the decade ending in 1760 laid the foundation of the British Empire in India. From then until 1858, when the administration of India was formally transferred to the British Crown following the great mutiny of native troops in 1857, the East India Company was constantly occupied with the suppression of native uprisings and the extension of British rule.

After World War I, in which the Indian states sent more than 1,000,000 troops to fight beside the Allies, Indian nationalist unrest rose to new heights under the leadership of a little Hindu lawyer, Mohandas K. Gandhi, called Mahatma Gandhi. His tactics, of a politico-religious nature, called for non-violent revolts

against British authority. He soon became the leading spirit of the all-India Congress party, which was the spearhead of Indian revolt against British rule. In 1919 the British gave added responsibility to Indian officials, and by an act passed in 1935 India was given a federal form of government and a measure of self-rule.

During the 1940's the policy of both the wartime coalition government of Britain and later the Labour government envisaged an unpartitioned India as a self-governing federal dominion including both British India and the native states. In 1942, with the Japanese pressing hard on the eastern borders of India, the British war Cabinet decided to send Sir Stafford Cripps to India to try to reach a political settlement with nationalist leaders. The mission failed. Shortly thereafter the Congress party took the position that the British must quit India. In August 1942, fearing mass civil disobedience, the government of India carried out widespread arrests of Congress leaders, including Gandhi.

Gandhi was released in May 1944, and other leaders later. Negotiations for a settlement were resumed and they proved fruitless until the British Labour government sent a mission in 1946 which obtained the agreement of the Congress party and Mohammed Ali Jinnah's Moslem League to a long-term plan for a Constitution based on three separate groups of provinces with a minimal center. However, agreement was not reached on an interim government and the Moslem League later reverted to its position of unconditional partition. Finally, in February 1947, the Labour government announced its determination to transfer power to "responsible Indian hands" by June 1948, even if a Constitution had not been worked out.

With the appointment at the same time of Lord Mountbatten as Governor General, events moved swiftly. By early June 1947,

POLITICAL SUBDIVISIONS OF REPUBLIC OF INDIA, NOVEMBER 1956

States	Area, sq. mi. (approx.)	Population, census 1951*		Area, sq. mi. (approx.)	Population, census 1951*
Andhra Pradesh ..	110,250	32,200,000	Travancore-Cochin	9,144	9,280,425
Assam	84,924	9,000,000	Centrally Administered Territories		
Bihar	67,830	38,930,000	Andaman and Ni-		
Bombay	188,240	47,800,000	cobar Islands ..	3,215	30,971
Jammu and			Delhi	578	1,744,072
Kashmir†	92,780	4,400,000	Himachal Pradesh	10,451	983,367
Kerala	14,980	13,600,000	Laccadive and Amin-		
Madhya Pradesh ..	171,200	26,100,000	dive Islands ..	10	21,035
Madras	50,170	30,000,000	Manipur	8,628	577,635
Mysore	72,730	19,000,000	Tripura	4,032	639,029
Orissa	60,140	14,600,000			
Punjab	46,616	16,000,000			
Rajasthan	132,300	16,000,000			
Uttar Pradesh ..	113,410	63,200,000			
West Bengal	33,279	26,160,000			

* Estimated on basis of census where territorial changes in unit have occurred since 1951. † Status in dispute with Pakistan.

agreement was reached on the partitioning of India along religious lines (a plan previously opposed by the predominant Hindus and by Britain) and on the splitting of the provinces of Bengal and the Punjab, which the Moslems had claimed in their entirety.

The Indian Independence Act, passed quickly by both houses of the British Parliament, received royal assent on July 18, 1947, and on Aug. 15 the Indian Empire, united under British rule for almost a century, passed into history.

Under the leadership of Pandit Jawaharlal Nehru, the new nation quickly took its place in world councils as a self-governing state. At home the nation pursued a policy of integration and reorganization designed to place effective power in the hands of the central government, which was faced at the outset by widespread communal rioting climaxed by the assassination of Gandhi, the great Hindu spiritual leader, on Jan. 30, 1948.

As a neutral nation India has played an important part in international affairs in the 1950s.

GOVERNMENT AND DEFENSE. India is now a sovereign republic within the Commonwealth of Nations—a status approved by the other Commonwealth nations at London in April 1949, on the condition that India recognize the King as head of the Commonwealth. Under the Constitution adopted by the Constituent Assembly on Nov. 26, 1949, India has a parliamentary type of government. The bicameral Parliament is composed of the Council of States (chosen by constituent states and the President) and the House of the People (500 members—all except 6 elected directly by popular vote for 5-year terms). The President is elected for a five-year term by an electoral college composed of Parliament and the elected members of the state legislatures. The Cabinet, headed by the Prime Minister, administers the government and is collectively responsible to the House of the People. The constituent states have their own Governors and popularly elected legislatures.

In national elections held in Feb.-Mar. 1957, the seats in the House of the People were filled as follows: Congress party, 365; Communists, 29; Praja Socialists, 19; Independents, 23; others, 52; vacancies, 12.

Native States. Most of the 560-odd native states and subdivisions of pre-1947 India acceded to the new nation, and the central government pursued a vigorous policy of integration. This took three forms: (1) merger into adjacent provinces, (2) conversion into centrally administered areas and (3) grouping into unions of states. Finally, under a controversial reorganization plan effective Nov. 1, 1956,

the unions of states were abolished and merged into adjacent states and India became a union of 14 states and 6 centrally administered areas.

The status of the large princely state of Jammu and Kashmir on the northwest frontier is in dispute with Pakistan. It is 85 per cent Moslem, but its Hindu ruling prince acceded to India, which took over administration following invasion by Moslem troops in late 1947. The U. N. Security Council voted on April 21, 1948, to hold a plebiscite in the area, but it was never held. The part occupied by India was incorporated into India in Jan. 1957.

Defense. The President has supreme command of the armed forces, and the Defense Minister is responsible to Parliament for the army, the navy and the air force, each under its own chief of staff and commander in chief.

The army has three territorial commands—southern, eastern and western—with headquarters at Poona, Ranchi and Delhi, respectively. In Dec. 1956, the navy had 2 cruisers, 6 destroyers, 4 frigates and escort craft and other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Expansion and modernization of all branches of education is under way, with emphasis on technological training. About 83.4% of the population was illiterate in 1951. In 1952-53 there were 222,014 primary schools with 19,523,003 pupils; 24,059 secondary schools, 6,007,516 pupils; 4,970 vocational schools, 1,066,437 pupils; 901 teachers' training colleges, 88,975 pupils. There were 32 universities. English is being replaced as the language of instruction by Indian languages.

Agriculture. More than 200,000,000 acres are under cultivation, but India probably will continue to be a food-deficit area for several years. Rice is the staple food crop; cotton, tea and jute are important cash crops. Production estimates for the crop year 1955-56 included rice, 38,824,000 metric tons (paddy); wheat, 8,919,000 tons; barley, 2,916,000 tons; tea, 300,200 tons; cottonseed, 1,421,000 tons; cotton (lint), 711,000 tons; jute (1956-57), 766,000 tons.

Livestock in 1951 included 42,584,000 buffalo, 130,298,000 other domestic cattle, 39,975,000 sheep, 47,121,000 goats and 4,173,000 pigs.

Manufacturing. The republic retained almost all of the industrial facilities of British India and is among the ten leading industrial nations of the world. Cotton and jute manufacturing are the two largest industrial activities, the former concentrated largely in Bombay and the latter in Calcutta. West Bengal and Bombay are the two most important areas of industrial concentration, with Madras ranking third in importance. In 1956, cotton mills pro-

duced 757,000 metric tons of cotton yarn and 4,850,000 meters of cloth.

Processing of sugar is of great importance; raw sugar production totaled 1,960,000 metric tons in the 1955-56 season plus 2,415,000 tons of *cane gur* for direct consumption. About 90 per cent of the world's supply of jute is processed in the republic. The iron and steel industry is being expanded; in 1956, 1,992,000 metric tons of pig iron and ferroalloys and 1,764,000 tons of raw steel were produced. Production of silk and woolen goods, vegetable oils, coir yarn, paper, matches, salt, cement, leather and shoes, and heavy chemicals is also important.

Communications. Railway mileage totaled 34,340 in 1955, almost all of it under government control. The chief ports are Bombay and Calcutta. According to *Lloyd's Register*, the merchant marine had 215 steamers and motor ships (100 tons and over) aggregating 580,456 gross tons on June 30, 1956. Roads in 1953 totalled 255,000 miles.

Trade. Recent trade data are as follows (in millions of rupees):

	1954	1955	1956*
Exports	5,627	6,077	6,042
Imports	6,175	6,729	8,146

* Provisional figures.

Leading customers in 1956 were Britain (31%), the U. S. (15%) and Japan (5%); leading suppliers, Britain (26%), the U. S. (12%) and western Germany (10%). Leading exports were tea (23%), jute and bagging (19%) and cotton manufactures. Main imports included petroleum and products, machinery, raw cotton and rice.

Finance. The 1957-58 budget provided for ordinary revenue of Rs. 6,360,000,000 and expenditure of Rs. 6,630,000,000. The estimated over-all deficit was Rs. 3,650,000,000. The public debt on March 31, 1956, was Rs. 35,297,700,000, most of which was held internally.

NATURAL FEATURES AND RESOURCES;

CLIMATE. The Indian republic contains a large part of the great Indo-Gangetic plain which extends from the Bay of Bengal on the east to the Afghan frontier and the Arabian Sea on the west. This plain is the richest and most densely settled part of the subcontinent, containing more than half the population. Another distinct natural region is the Deccan, a plateau of 2,000 to 3,000 feet elevation, occupying the southern or peninsular portion of the subcontinent. In several regions, the Deccan is quite mountainous.

Forming a part of the republic are several groups of islands—the Laccadives (14 islands) in the Arabian Sea; the Andamans (204 islands) and the Nicobars (19 islands) in the Bay of Bengal.

India's three great river systems, all rising in the Himalayas, have extensive deltas. The Ganges flows south and then east for 1,540 miles across the northern plain to the Bay of Bengal; part of its delta, which begins 220 miles from the sea, is within the republic. The Indus, starting in Tibet, flows northwest for several hundred miles in Kashmir before turning southwest toward the Arabian Sea; it is important for irrigation in Pakistan. The Brahmaputra, also rising in Tibet, flows eastward first through India and then south into Pakistan and the Bay of Bengal.

Minerals. The republic has rich mineral resources. The most valuable mineral is coal, deposited throughout most of the nation; production in 1956 was approximately 40,055,000 metric tons. Manganese ore (about 1,544,700 tons in 1955) is mined in Madhya Pradesh, and gold in Orissa.

Assam and the Punjab produce oil. Other minerals include iron ore, monazite, diamonds, magnesite, uranium, zircon, silver, graphite, gypsum, tungsten ore and sapphires.

Climate. India's climate varies from temperate in the north to tropical in the south, where temperatures are almost constant the year around. During the November-February cool season, northern India has a climate like that of the Riviera. From March to June steadily rising temperatures reach a peak sometimes as high as 115°, and then comes the southwest monsoon. Rainfall is heavy, averaging 50 to 60 inches in Assam and reaching 500 inches in the Assamese Garo hills.

Pakistan (Republic)

(Member of Commonwealth of Nations)

Area: 364,737 square miles.

Population (est. 1956): 83,603,000 (Moslem, 86%; Hindu, 13%; others, 1%).

Density per square mile: 229.2.

President: Maj. Gen. Iskander Mirza (provisional).

Prime Minister: H. S. Suhrawardy.

Principal cities (census 1951): Karachi, 1,126,417 (capital); Lahore, 849,476 (capital, west Pakistan); Dacca, 276,033 (capital, east Pakistan); Hyderabad, 241,801 (trade and rail center); Rawalpindi, 237,219 (military center).

Monetary unit: Pakistani rupee.

Principal languages: Bengali (official), Urdu (official), English*, Hindi, Punjabi.

* To be used for official purposes until 1976.

HISTORY. Pakistan, a self-governing member of the Commonwealth of Nations and one of the two successor states to British India, is the world's largest and most important Moslem state.

The history of Pakistan prior to 1947 is principally that of India. (See India.) Its creation was to a large extent attributable to Mohammed Ali Jinnah, who envisaged and pressed for the idea of a predomi-

nantly Moslem state carved out of the Moslem areas of British India. Upon the transfer of power on Aug. 15, 1947, Jinnah became the first Governor General; he died on Sept. 11, 1948, and was succeeded by Khwaja Nazimuddin. The latter became Prime Minister upon the assassination of Liaquat Ali Khan, Oct. 16, 1951; he was replaced on Apr. 17, 1953, by Mohammed Ali Chaudry Mohammed Ali succeeded him on Aug. 11, 1955. Pakistan was proclaimed a republic March 23, 1956, and Gov. Gen. Iskander Mirza was elected Provisional President. H. S. Suhrawardy, the first non-Moslem League prime minister, took office Sept. 12, 1956.

GOVERNMENT AND DEFENSE. Under the Constitution adopted Feb. 29, 1956, Pakistan is a republic but continues its membership in the Commonwealth of Nations. The President is elected for 5 years by members of the central and provincial legislatures. The Prime Minister and his Cabinet are named by the President but are collectively responsible to the National Assembly. The Assembly has 300 members, divided equally between East and West Pakistan and directly elected for 5 years.

Provinces. Pakistan consists of two provinces—West and East Pakistan—approximately 1,000 miles apart, separated by the republic of India. The province of West Pakistan consists of Sind, Baluchistan, the former North-West Frontier Province, western Punjab, the princely state of Bahawalpur and a few other small native states. The province of East Pakistan consists of eastern Bengal and the Sylhet district of Assam. Pakistan contains large communal minorities of Hindus and Sikhs. Over half the nation's population is concentrated in East Pakistan, which contains only 15 per cent of the total area.

Defense. In the division of the British Indian Army, Pakistan received 20 regiments, which, with levies and contributions of native princes, made a total army strength of about 200,000. The Pakistan Navy in Dec. 1956 had a force of 1 cruiser, 8 destroyers and several smaller vessels. **SOCIAL AND ECONOMIC CONDITIONS.** Literacy was barely 13.2 per cent, according to the 1951 census. In 1955 there were 42,474 primary schools with 3,200,000 pupils, 5,118 secondary schools with 1,150,000 pupils and 6 universities.

Pakistan, poor in industry and natural resources, is mainly an agricultural nation. Upwards of 45,000,000 acres are under cultivation, almost half of which are irrigated, largely in Sind and west Punjab in western Pakistan. The Punjab contains important wheat-growing areas, and eastern Pakistan is rich in jute, rice and tea. Production estimates for the crop year 1955-56 included wheat, 3,223,000 metric tons; rice, 10,987,000 tons (paddy); maize, 456,000

tons; barley, 125,000 tons; tea, 23,400 tons; cotton (lint), 309,000 tons; (1956-57) jute, 1,000,000 tons. In 1953-54 there were 6,145,000 sheep, 7,067,000 buffalo, 31,060,000 cattle, 470,000 horses and (1952) 477,000 camels.

Pakistan is an exporter of agricultural products and an importer of manufactured commodities. Recent statistics are as follows (in millions of Pakistani rupees):

	1954	1955	1956
Exports	1,187	1,505	1,616
Imports	1,152	1,085	1,673

Chief exports in 1956 were jute (46%), raw cotton (23%), tea, wool and jute manufactures. Leading customers in 1955 were Britain (15%), India (13%), Japan (12%) and the U. S. (8%); leading suppliers, Britain (24%), Japan (14%) and the U. S. (11%). Leading imports were machinery, petroleum and products, iron and steel and products, vehicles and cotton piece goods.

Development of a unified nation is retarded by the fact that communication between east and west Pakistan is possible only through a thousand miles of Indian territory or by a long sea voyage. Railway mileage in 1955 totaled about 7,200.

Western Pakistan has an estimated road mileage of 46,000, about half of which is suitable for motor traffic. Eastern Pakistan has few roads for motor vehicles, but there are about 2,800 miles of waterways navigable by small steamers. On June 30, 1956, the merchant marine had 54 vessels (100 tons and over) aggregating 153,537 gross tons. Karachi, chief port, is the distribution center for north India and has the most important airport on the subcontinent. Chittagong is being developed as a port for eastern Pakistan.

Since partition, Pakistan has made much progress toward industrialization. The most important manufacturing area is in the vicinity of Lahore in the Punjab. Industries include cotton ginning, spinning and weaving, jute manufacturing, sugar refining, cement making, flour milling, railway and engineering workshops and petroleum refining.

The budget for the fiscal year 1956-57 estimated revenue at Rs. 1,310,000,000 and ordinary expenditure at Rs. 1,304,000,000; capital expenditure was placed at Rs. 1,274,000,000, to be financed by loans and foreign aid.

NATURAL FEATURES AND RESOURCES; CLIMATE. Almost all of Sind and the west Punjab are a continuation of north-central plains leading up to rugged mountains in the north and west which traverse Baluchistan and the North-West Frontier Province. Eastern Pakistan is a low-lying, flat country with elevation averaging not more than 600 feet above sea level.

Mineral resources are limited. Production in 1955 included petroleum, 20,700,000 bbl.; coal and lignite, 531,600 metric tons; chromite, 28,900 tons; gypsum, 28,600 tons. Vast quantities of natural gas were discovered at Sui, Baluchistan, in 1952. Production in 1954 was 59,100,000 cu.m.

Western Pakistan has a brisk, cool season between November and March, with average mean temperature of about 60°, and an extremely warm period between April and November, with an average mean of 85°. Rainfall averages about 10 inches a year, of which Sind may receive as little as 6.3 in. Eastern Pakistan is within the range of the summer monsoon, with average annual rainfall of 85 in. The average maximum temperature varies between 75° and 100° April to June; the minimum, between 45° and 60° November to January.

OCEANIA

Australia, Commonwealth of

(Member of Commonwealth of Nations)

Area: 2,974,581 square miles.

Population (est. June 30, 1956): 9,427,558 (excluding full-blooded aborigines, estimated at 50,000).

Density per square mile: 3.2.

Ruler: Queen Elizabeth II.

Governor General: Field Marshal Sir William Slim.

Prime Minister: Robert Gordon Menzies.

Principal cities (est. June 30, 1956): Sydney, 1,935,880 (seaport, wool market); Melbourne, 1,595,300* (seaport, wool, wheat); Brisbane, 527,500 (seaport, industrial center); Adelaide, 514,000 (seaport); Perth, 369,000 (western seaport); Canberra, 32,440 (capital).

Monetary unit: Australian pound (£A).

Language: English.

Religions (census 1947): Anglican, 39.0%; Roman Catholic, 20.7%; Presbyterian, 9.8%; Methodist, 11.5%; other Christians, 7.1%; others, 11.9%.

* Estimate Dec. 31, 1955.

HISTORY. Australia was the last continent to be discovered. The first Europeans to land were the Dutch, who sailed into the Gulf of Carpentaria in March, 1606. Later in the same year, Luis Vas de Torres, a Spaniard, sailed through the strait subsequently named for him, and may have touched at several points on the north coast. In 1642 Abel Tasman (for whom Tasmania was named) sailed from west to east along the southern shore and proved that Australia was not a part of the Antarctic continent. The continent was called New Holland until about 1850.

In 1770 Captain James Cook, after visiting New Zealand, sailed to the east coast of New Holland and landed south of the present city of Sydney. His account of the country led to its being claimed and settled by Great Britain.

The first settlement, made in 1788 at Botany Bay, was founded as a penal station for criminals from England. Transportation of criminals was virtually suspended in 1839, and Australia had comparatively few white settlers until gold was discovered in Victoria in 1851, after which immigrants poured in. By 1860 all the states (then separate colonies) except Western Australia had been granted responsible government.

On January 1, 1901, the six Australian states united to form the Commonwealth of Australia. The Commonwealth supported Great Britain wholeheartedly in both World Wars I and II.

In the general elections held August 21, 1943, Prime Minister John Curtin's Labour government was confirmed in office. Curtin died July 5, 1945, and was succeeded by Joseph B. Chifley, also of the Labour party. The Labour government was defeated by the Liberal-Country-party coalition in general elections held Dec. 10, 1949, and Robert Gordon Menzies, the Liberal leader, became Prime Minister. Elections held in 1951, 1954 and 1955 were again won by the coalition, although by narrower margins.

GOVERNMENT AND DEFENSE. Australia, a self-governing member of the Commonwealth of Nations, is a union of 6 states (New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania) and 2 territories (Northern Territory, Australian Capital Territory).

Legislative power is vested in a Parliament of 2 houses—the Senate with 60 members (10 for each state), the House of Representatives with 122 members (plus 2 without vote who represent the territories) elected on a population basis.

Executive power nominally is exercised by the Queen, through a Governor General, who is appointed by her. Actually, however, the Commonwealth is administered by the Prime Minister and the Cabinet members, who are responsible to the House of Representatives and must enjoy its confidence. The House of Representatives continues its sessions for three years from the date of its first meeting, unless sooner dissolved. Senators are chosen for six years, but the Senate may be dissolved in the event of prolonged disagreement with the House. The party alignment in the House after the elections of Dec. 10, 1955, was as follows: Liberal-Country-party coalition 75; Labour 47 (and 2 non-voting members).

Each of the states is headed by a Governor who is appointed by the Queen and is advised by the Prime Minister and his Cabinet; the latter actually administer the government. As in the U. S., the state governments retain the powers not specifically

delegated to the federal government. The Northern Territory is administered by the federal government.

Federal judicial power is vested in a Federal Supreme Court of 7 justices, appointed by the Governor General in Council. Each state has its own judicial system.

Compulsory military service was reintroduced in 1951. The strength of the regular forces in 1955 was: army, 23,098; navy, 13,111; air force, 15,405. In Dec. 1956 the navy had 2 light aircraft carriers, 1 cruiser, 6 destroyers, 17 frigates and escort vessels and numerous smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Normal primary education is provided free by the states. In 1953 there were 7,595 state primary and secondary schools, with average attendance of 1,149,915, and 1,958 private schools, with average attendance of 366,086. The 10 universities had 23,025 students (including part-time) in 1955-56. Illiteracy is almost unknown among the European population.

Australia is the world's chief producer of wool, and sheep farming is the Commonwealth's most important single industry. About 55 per cent of Australia's total area is suitable (mining excepted) only for pastoral pursuits. On March 31, 1956, there were 139,124,000 sheep, 16,457,000 cattle, 1,166,000 hogs and 770,000 horses. The production of wool in 1955-56 was 629,359 long tons; of butter, 208,590 metric tons; cheese, 38,693 tons; meat, 1,219,055 tons.

The most important crop is wheat; the areas of heaviest production are in South Australia and New South Wales, but production in Western Australia is rapidly increasing.

CROP ACREAGE AND PRODUCTION

	(In thousands)			
	Acres		Long tons	
	1954-55	1955-56	1954-55	1955-56
Wheat	10,673	10,166	4,520	5,235
Oats	2,574	3,354	586	1,412
Barley	1,691	1,894	656	930
Maize	170	167	127	119

Sugar and cotton are grown in Queensland and New South Wales, tobacco in northeast Victoria, and vines chiefly in South Australia and Victoria.

New South Wales is the leading industrial state. Power for industry is derived almost entirely from coal. Steel production was 2,602,130 long tons in 1956; pig iron, 2,073,201 tons; cement, 2,101,268 tons; cotton yarn, 41,009,000 lb.; wool yarn, 46,360,000 lb.

Trade statistics for three years (in millions of Australian pounds) are as follows:

	1953-54	1954-55	1955-56
Exports	828.3	774.2	781.9
Imports	681.5	843.7	821.1

In 1955-56 the leading customers were Britain (33%), Japan (11%), France (9%) and the U. S. (7%); leading suppliers, Britain (43%), the U. S. (12%), western Germany (4%) and Arabian states (4%). Chief exports were wool (43%), meat (8%), wheat (6%) and fruit (4%). Leading imports included petroleum and products, motor vehicles, iron and steel and cotton piece goods.

The principal ports are Sydney, Melbourne and Adelaide. Railway mileage in 1954 totaled 27,000; roads, over 500,000. Civil aviation is under Commonwealth control. The merchant marine had 359 ships of 100 tons and more, aggregating 605,965 gross tons, on June 30, 1956. On Dec. 31, 1956, there were 1,526,744 automobiles and 694,439 commercial vehicles.

Recent public finance data on consolidated account are as follows (in millions of Australian pounds):

	1954-55	1955-56*	1956-57*
Revenue	1,067.4	1,138.3	1,235.1
Expenditure	1,030.5	1,138.3	1,234.9

* Budget estimate.

The public debt (federal and state) on Dec. 31, 1956, was £A4,060,005,000 (federal only: £A2,026,775,000).

NATURAL FEATURES AND RESOURCES; CLIMATE. Australia is approximately equal in area to the United States and is more than three-fourths the size of Europe.

Along the east coast, ranges of mountains run from north to south, reaching their highest point in Mt. Kosciuszko (7,352 ft.). The western half of the continent is occupied by a desert plateau which rises into barren, rolling hills near the west coast. It includes the Great Victoria Desert, to the south, and the Great Sandy Desert to the north. The island of Tasmania (26,215 sq. mi.) lies off the southeastern coast.

Australia possesses considerable mineral resources. The value of mineral output in 1955 was £A165,079,000. Most important is gold (1956 output: 1,030,982 ounces), followed by coal, mined near Sydney, Brisbane and in eastern Tasmania (1956 output: 19,292,860 long tons, plus 10,559,801 tons of brown coal). The Broken Hill mines in New South Wales are one of the most valuable silver-lead-zinc areas in the world. Silver production in 1955 was 14,555,412 oz.; lead, 295,944 long tons; zinc, 256,564 tons. Other important minerals in 1955 included tin (2,017 tons), copper (45,496 tons), iron ore (metal content) (2,304,165 tons) and uranium. Petroleum was discovered in Western Australia in 1953. Production in 1954-55 was 412,954,807 gal.

Forest products include timber (rough sawn), eucalyptus oil, sandalwood oil, tan bark and yacca gum. Sea products include

bêche-de-mer, oysters, pearls, pearl shell, tortoise shell and agar-agar.

Climate. The northern third of the country lies within the torrid zone and the remainder within the south temperate zone. The coolest portion of the mainland (Victoria) is not unlike Spain and south Italy. The average temperature for Australia as a whole is 70°, and the northern coastal areas average 82°. Only in the center of the continent does the annual range of temperature exceed 30°. Large areas of the continent receive less than 10 inches of rain annually. The eastern highlands and Victoria are the best-watered regions.

DEPENDENCIES. Norfolk Island (13 sq. mi.), under Commonwealth administration since 1914, lies about 800 miles east of New South Wales. It enjoys a delightful subtropical climate. Citrus fruits, bananas and coffee are grown.

Nauru (about 8 sq. mi.), an important source of phosphate (exports about 1,000,000 tons annually) was annexed by Germany in 1888 and was placed under joint Australian, New Zealand and British mandate after World War I. In 1947 it was placed under U. N. trusteeship, with the same three administering powers. It lies approximately 2,215 miles northeast of Sydney.

The Ashmore and Cartier Islands (.8 sq. mi.), about 200 mi. off the northeast coast, were placed under Australian authority in 1931, while the Heard and McDonald Islands (158 sq. mi.), about 2,500 mi. southwest of Fremantle, were transferred to Australian control in 1947.

The Australian Antarctic Territory (2,472,000 sq. mi.), comprising all the islands and territories other than Adélie Land situated south of 60° S. lat. and lying between 160° E. long. and 45° E. long., was placed under Australian authority by an order in council effective in 1936.

The Cocos (Keeling) Islands (5 sq. mi.; population 1,000) are a group of 27 small coral islands in the Indian Ocean about 1,160 mi. southwest of Singapore. Used as a link on the Australia-South Africa air route, they were placed under Australian administration in 1951. Christmas Island (62 sq. mi.; population 2,000), about 850 mi. southeast of Singapore, was transferred to Australian control in 1957. It has important phosphate deposits.

PAPUA AND NEW GUINEA, TERRITORY OF—Status: Australian territory and U. N. trust territory.

Administrator: D. M. Cleland.

Capital: Port Moresby (population 13,800).

Chief exports: copra, rubber, gold.

Agricultural products: coconuts, rubber, copra, cacao.

Minerals: gold, silver, platinum.

Effective July 1, 1949, the Australian

territory of Papua and the U. N. trust territory of New Guinea were joined in an administrative union by act of the Australian Parliament. Provision is made for an executive and a legislative council.

Papua, comprising the southeastern part of the island of New Guinea, and the islands of the D'Entrecasteaux, Louisiade and nearby groups, was annexed by Queensland in 1883 and by the British Crown in 1888. It came under the control of the Australian Commonwealth in 1901 and became the Territory of Papua in 1906. Japan invaded Papua in early 1942, but in Dec. 1942, Australian control was restored.

On June 30, 1954, there were 6,313 non-natives in the territory.

The U. N. trust territory of New Guinea, comprising the northern section of eastern New Guinea (93,000 sq. mi.), was mandated in 1920 by the League of Nations to the government of the Commonwealth of Australia, together with the Bismarck Archipelago (New Britain, New Ireland and adjacent islands), the Admiralty Islands with several outlying groups, and the northern Solomon Islands (Bougainville and Buka). It was placed under United Nations trusteeship Dec. 13, 1946, with Australia as the administering power. Japanese troops occupied much of the territory in 1942-45. On June 30, 1954, there were 8,020 Europeans and 3,422 other nonnatives in the territory.

FIJI—Status: Colony.

Governor: Sir Ronald H. Garvey.

Capital: Suva (population 36,967).

Foreign trade (1955): exports, £12,542,064 (38% to Britain); imports, £14,373,951 (37% from Britain). Chief exports: sugar (49%), coconut oil (18%), gold (8%).

Agricultural products (exports 1955): sugar (156,160 long tons), coconut oil (18,586 tons), copra, bananas, pineapples.

Minerals: gold (1955: 73,989 oz.).

Fiji colony consists of an archipelago of from 200 to 250 islands in the South Pacific Ocean about 1,740 miles northeast of Sydney, Australia. The larger islands, including Viti Levu (4,011 sq. mi.) and Vanua Levu (2,137 sq. mi.) are mountainous and of volcanic origin. The archipelago was ceded to Great Britain by the native ruler in 1874.

The population of the archipelago in Dec. 1955 included 9,391 Europeans, 146,842 Fijians and 166,262 Indians. Importation of the latter to work the sugar plantations has led to important social and economic changes. There has been almost no intermarriage between Fijians and Indians, and considerable ill feeling has developed between them.

During World War II, the archipelago was an important air and naval station on

the route from the United States west coast and Hawaii to Australia and New Zealand.

Fiji has a pleasant climate, with the temperature seldom leaving the 60°-90° range; rainfall is heavy in the southeastern three quarters of the archipelago, averaging 10-12 ft. annually, but is almost nil in the northwestern quarter.

TONGA (FRIENDLY ISLANDS)—Status: Protected state.

Ruler: Queen Salote Tupou.

Foreign trade (1956): exports, £T1,624,301; imports, £T1,514,934. Chief export: copra (86%).

This native Polynesian kingdom in the Pacific came under British protection through the Anglo-German agreement of November 14, 1899. The native Queen is advised by a British Agent; the 21-member native Legislative Council is partly elected and partly nominated. The only important products are copra and bananas.

PITCAIRN ISLAND—Status: Colony.

Located in the South Pacific, about midway between Australia and South America, Pitcairn has an area of 2 square miles. It was settled in 1790 by British mutineers from the ship *Bounty*, commanded by Capt. Bligh. Overpopulation forced removal of the settlement to Norfolk Island in 1856, but about 40 soon returned. The island is administered by the Governor of Fiji through an elected council headed by a Chief Magistrate. The population is about 150.

New Zealand

(Member of Commonwealth of Nations)

Area: 103,740 square miles (including outlying islands).

Population (est. Mar. 31, 1957): 2,221,169 (1951: European, 93.3%; Maori and half-caste, 5.9%; others, .8%).

Density per square mile: 21.4.

Ruler: Queen Elizabeth II.

Governor General: Viscount Cobham.

Prime Minister: Keith Jack Holyoake.

Principal cities (census, Apr. 1956): Auckland (greater), 380,412 (seaport and naval base); Christchurch, 193,182 (cereals, stock raising); Wellington, 138,035 (capital); Dunedin City, 99,326 (textiles).

Monetary unit: New Zealand pound (£NZ).

Language: English.

Religions (census 1951): Church of England, 37.5%; Presbyterian, 22.3%; Roman Catholic, 13.6%; Methodist, 8.1%; Baptist, 1.6%; others, 16.9%.

HISTORY. New Zealand, about 1,250 miles east of Australia, consists of two main islands and a number of smaller outlying islands so scattered that they range from the tropical to the antarctic. The islands, which have approximately the area of

Italy, were discovered and named New Zealand in 1642 by Abel Tasman, a Dutch navigator. Captain James Cook explored them in 1769 and after him came many other sailors, sealers, whalers and traders. English missionaries landed in 1814 but made slow progress. On Jan. 22, 1840, to head off a possible French move to claim New Zealand, Britain formally annexed it.

New Zealand was granted self-government in 1852, a full parliamentary system and ministries in 1856 and dominion status on Sept. 26, 1907. Meanwhile from 1861 to 1871 there was fierce intermittent fighting with the native Maoris. Gold was first discovered in 1853.

New Zealand's Labour party came to power in 1935 for the first time, with Michael J. Savage as Prime Minister. The party began a program of liberal economic and social measures and it was again successful in the 1938 elections.

In World War II, New Zealand troops fought in Egypt, Greece, Crete, North Africa, Sicily and Italy, and the islands served as a major base for U. S. troops in the Pacific war.

After 14 years in power, the Labour party was defeated at the general election of Nov. 30, 1949, and the National party took office with Sidney G. Holland as Prime Minister. **GOVERNMENT AND DEFENSE.** New Zealand is a self-governing member of the Commonwealth of Nations. The Queen is represented by a Governor General who is named by her after consultation with the New Zealand government. Legislative power is vested in the eighty-member House of Representatives. The former upper house (Legislative Council) was abolished effective Jan. 1, 1951. The House elected on Nov. 13, 1954, had 45 National party and 35 Labour party members.

Military service was voluntary until July 22, 1940, when compulsory service was instituted. Service outside New Zealand, hitherto voluntary, also became obligatory during World War II. At full mobilization, New Zealand had 157,000 men in the armed forces and 124,000 in the Home Guard. The peacetime force is stabilized at 11,000 men. Naval forces include 2 cruisers, 6 escort destroyers and a number of mine sweepers.

Navy and volunteer army forces were dispatched to Korea in 1950, and compulsory service was readopted. A mutual defense pact with the U. S. was signed Sept. 1, 1951.

SOCIAL AND ECONOMIC CONDITIONS. State education is free and compulsory between the ages of 7 and 15. More than half the Maoris attend the regular public schools; the remainder attend missionary and native village schools. In Dec. 1954 there were 2,230 primary schools with 358,801 students and 294 secondary and

technical schools with 74,716 students. University students numbered 10,304. About 10 per cent of the national budget is expended on education.

Primarily a grazing country, New Zealand is one of the world's largest exporters of mutton, lamb, wool, butter and cheese. In 1955, livestock included 39,117,300 sheep, 5,886,777 cattle and 681,359 hogs. Wool production for 1955-56 was 462,000,000 lbs. (greasy basis). Outside of grass, the chief crop is wheat (2,651,000 bushels in 1955-56). Other crops are oats, barley, potatoes, onions, tobacco, fruits and vegetables. Butter production in 1955-56 was 203,000 metric tons; cheese, 98,000 tons; meat (1955), 630,200 tons.

The chief industries of New Zealand are freezing of meat and making of butter, cheese and condensed milk. Others of major importance are electricity generation, saw milling and clothing manufacture.

Trade statistics for three years (in millions of New Zealand pounds):

	1954	1955	1956*
Exports	244.0	258.6	275.1
Imports	213.1	251.1	275.1

* Provisional.

Leading customers in 1956 were Britain (65%), the U. S. (7%), France (6%) and western Germany (5%); leading suppliers, Britain (54%), Australia (14%), the U. S. (8%) and western Germany (3%). Leading exports were wool (33%), butter (19%) and lamb and mutton (16%).

According to *Lloyd's Register*, the merchant marine had 162 ships (100 tons and over) aggregating 249,786 gross tons on June 30, 1956. Government-owned railway mileage in 1954 was 3,535; highway mileage in 1953 was 12,835.

Recent government financial data on ordinary account are as follows (in millions of New Zealand pounds):

	1954-55	1955-56	1956-57
Revenue	191.2	197.4	206.3
Expenditure	184.4	193.3	203.0

The public debt on March 31, 1957, was £NZ757,119,696 excluding £NZ24,100,200 on which interest payments had been suspended since 1931 by agreement with the British government.

NATURAL FEATURES AND RESOURCES:
CLIMATE. New Zealand's two main components are North Island and South Island, separated by Cook Strait, which varies from sixteen to 190 miles in width. North Island (44,281 sq. mi.) is 515 miles long and volcanic in its south central part. It contains many hot springs and beautiful geysers.

South Island (58,093 sq. mi.) has the Southern Alps along its west coast, with

Mt. Cook (12,349 feet) the highest point in New Zealand.

Principal minerals are coal (1956: 2,565,000 long tons) and gold (1956: 26,063 ounces). Other minerals of importance include tungsten, pumice, silica sand, asbestos, scheelite, iron ore and phosphate. About 30 per cent of the total area is forested; 596,900,000 board feet of lumber were cut in 1956-57.

Flounder, snapper and tarakihi account for 75% of New Zealand's fishery industry. There also are extensive oyster beds.

Numerous rushing streams give New Zealand a great volume of hydroelectric power. About 95 per cent of the population has access to power. Installed capacity (1955) was 994,000 kw.; production (1956), 4,164,000,000 kwh.

The ocean tempers New Zealand's climate, which otherwise might have great variation. The range of mean temperatures is small (at Auckland, 66.3° in January, 51.2° in July; at Wellington, 60.9° in January, 47.2° in July). Rainfall is moderate except on the western slope of the Southern Alps; it averages 45.3 inches annually at Auckland and 47.5 inches at Wellington.

DEPENDENCIES. The Auckland Islands (234 sq. mi.) and Campbell Island (44 sq. mi.) are the principal outlying islands, which have a total area of 324 square miles. They are included within the geographical boundaries of New Zealand as proclaimed in 1847. The Auckland Islands and Campbell are uninhabited. Six hundred miles north of the Auckland Islands are the volcanic Kermadec Islands (13 sq. mi.), annexed in 1887. The Union (or Tokelau) Islands (4 sq. mi.), transferred in 1925 from the Gilbert and Ellice Islands colony, were declared part of New Zealand effective Jan. 1, 1949.

In Polynesia a number of uninhabited islands were brought under New Zealand's control in 1901. Rarotonga and Mangala in the Cook group total 84 square miles. Niue (or Savage Island) (115 sq. mi.) is the largest island outside the Cook group. New Zealand also administers the Ross Dependency (175,000 sq. mi.), an antarctic region claimed by Great Britain in 1923.

WESTERN SAMOA—Status: U. N. trust territory.

High commissioner: G. R. Powles.

Capital: Apia (population 16,000).

Foreign trade (1956): exports, £1,805,696; imports, £1,860,420. Chief exports: cacao, copra, bananas.

Principal products (exports 1956): copra (13,581 long tons), cacao (3,338 tons), bananas, tropical fruits.

The former German Samoan Islands were occupied by New Zealand troops in the opening weeks of World War I and were mandated to New Zealand by the League of Nations in 1920 as the Territory of Western Samoa. They came under U. N.

trusteeship in 1947, with New Zealand continuing as the administering authority. The High Commissioner is assisted by an Executive Council, a Legislative Assembly which has a Samoan majority and a consultative Native Council. There are 9 islands, of which the largest and most populous are Savaii (703 sq. mi.) and Upolu (430 sq. mi.). They are largely mountainous but fertile. The inhabitants are Polynesian Christians. Europeans numbered 450 in 1951.

PACIFIC ISLANDS (British)

High Commissioner in Western Pacific: Sir John Gutch.

Island groups in the Pacific administered by the British High Commissioner in the Western Pacific include (1) Gilbert and Ellice Islands, (2) British Solomon Islands, and (3) New Hebrides Condominium (see French Overseas Territories). The High Commissioner has headquarters at Honiara, Solomon Islands.

GILBERT AND ELLICE ISLANDS—Status: Colony.

The islands in these groups (including the Gilbert group; the Ellice group; Ocean Island [the seat of administration], Fanning, Washington and Christmas Islands; and the Phoenix group) were proclaimed a British protectorate in 1892 and annexed as a colony in 1915. The most important product is high-grade phosphate.

Ownership of Canton and Enderbury islands in the Phoenix group was long in dispute between Great Britain and the United States until 1939, when an agreement for "use in common" was reached by the two governments. Several of the Gilbert islands were occupied by Japanese forces in World War II, and Tarawa was the scene of one of the fiercest battles in U. S. Marine Corps history in Nov. 1943.

SOLOMON ISLANDS—Status: Protectorate.

This British protectorate, lying east of New Guinea, includes the islands of Guadalcanal, Malaita, San Cristobal, New Georgia, Santa Isabel, Choiseul and numerous smaller islands. Bougainville, one of the group, is under Australian mandate. The islands, which came under British protection late in the 19th century, were the scene of several important U. S. naval and military victories during World War II. There are no native states, and administration is carried on by the High Commissioner assisted by a nominated Advisory Council. The most important products are copra and kauri wood. The population is predominantly Melanesian; Europeans numbered 647 in 1954.

Bulgaria (People's Republic)

(Narodna Republika Blgariya)

Area: 42,796 square miles.

Population (census 1956): 7,629,254* (1952: Bulgarian, 91%; Turkish, 6%; Gypsy, 2%; others, 1%).

Density per square mile: 178.3*

Chairman of Presidium: Georgi Damjanov.

Premier: Anton Yugov.

Principal cities (est. 1953): Sofia, 600,000 (capital, railroad center); Plovdiv, 150,000 (commercial center); (census 1946) Varna, 77,792 (Black Sea port); Ruschuk, 53,420 (chief Danube port); Burgas, 43,684 (Black Sea port).

Monetary unit: Lev.

Languages: Bulgarian, Turkish.

Religions: Greek Orthodox, 84.4%; Mohammedan, 13.5%; Jewish, .8%; Roman Catholic, .3%; others, .5%.

* Preliminary figures.

HISTORY. Bulgaria, with a strife-ridden political past, is an agrarian country about the size of Virginia. It sided timidly with Germany in World Wars I and II, hoping to win territory. It lost in both wars.

The first Bulgarians, a tribe of wild horsemen akin to the Huns, crossed the Danube from the north in A.D. 679, and took the province of Moesia from the Roman Empire. They adopted a Slav dialect and Slavic customs and twice conquered most of the Balkan peninsula between 893 and 1280. After the Serbs subjected their kingdom in 1330, the Bulgars gradually fell prey to the Turks, and from 1396 to 1878, Bulgaria was a Turkish province. In 1878, after the Turks had ruthlessly suppressed a Bulgar revolt, Russia forced Turkey to give the country its independence; but the European powers, fearing that Bulgaria might become a Russian dependency, intervened. By the Treaty of Berlin (July, 1878), Bulgaria became autonomous under Turkish sovereignty, with the province of Eastern Rumelia under a Christian Governor.

In 1887, Prince Ferdinand of Saxe-Coburg-Gotha was elected ruler; on Oct. 5, 1908, he declared Bulgaria (and Rume-
lia) an independent kingdom.

In the First Balkan War (1912-13), Bulgaria joined its neighbor states and defeated Turkey; then it bickered with Serbia and Greece over division of Macedonia and was defeated by them in the Second Balkan War, which lasted one month.

Still coveting Macedonia, Bulgaria joined Germany in World War I and lost. On Oct. 3, 1918, Tsar Ferdinand abdicated in favor of his son, who became Tsar Boris III. The Treaty of Neuilly the next year disarmed Bulgaria, reduced it to its 1878 size, and levied a heavy indemnity. Internal disorder, underground intrigue and Agrar-

lan-Communist agitation marked the next fifteen years.

Boris assumed dictatorial powers in 1934-35. When Hitler awarded Bulgaria Southern Dobruja, taken from Rumania in 1940, the weak but land-hungry Boris joined the Nazis in war the next year and occupied parts of Yugoslavia and Greece. Later, with the fortunes of war swinging inexorably against them, the Germans tried to force Boris to send his troops against the Russians. Boris resisted and died under mysterious circumstances on Aug. 28, 1943.

Simeon II, infant son of Boris, became nominal ruler under a regency. Three days after Russia declared war on Bulgaria on Sept. 5, 1944, Bulgaria declared war on Germany. Russian troops streamed in the next day, and under an informal armistice a coalition "Fatherland Front" Cabinet was set up under Kimon Georgiev.

The Fatherland Front regime represented the Communist, Zveno, Agrarian and Social Democratic parties, but real power was in the hands of the Communists, who had active Soviet support and were ably led by Georgi Dimitrov, veteran party leader and former Secretary-General of the Comintern. This government initiated extensive social and economic reforms and suppressed all political groups which failed to subscribe to its policies.

After a plebiscite held Sept. 8, 1946, which resulted in overthrow of the monarchy, and the Oct. 27 elections, the Communists quickly moved to take over the government officially and to reduce the political opposition to complete impotence.

Under the peace treaty which took effect Sept. 15, 1947, after World War II, Bulgaria's boundaries are those which existed Jan. 1, 1941, thus including Southern Dobruja. Bulgaria was to pay reparations in the amount of \$45,000,000 to Greece and \$25,000,000 to Yugoslavia and was to make compensation for damage to Allied property in Bulgaria at the rate of 75% of the cost of replacement.

The United States broke diplomatic relations with Bulgaria on Feb. 21, 1950. Bulgaria was admitted to the U. N. in 1955.

GOVERNMENT AND DEFENSE. The Constitution of 1947, modeled after the U.S.S.R.'s, provides that the unicameral National Assembly is "the supreme organ of the state." The Assembly elects a 15-member Presidium, the President of which is the nominal Chief of State. Governmental administration is carried on by the Premier and his Cabinet, who are responsible to the Assembly. On Feb. 4, 1948, the Communist-dominated Fatherland Front was declared the only official party.

The 1947 treaty of peace fixed the strength of the armed forces as follows: army 55,000; anti-aircraft artillery 1,800;

navy 3,500; and air force 5,200 men and 90 aircraft, none of them bombers. The army was purged of all anti-Communist officers late in 1946 and has been reorganized along Soviet lines. Notwithstanding the treaty provisions, the army had an estimated strength of 200,000 by 1954. A reduction of 18,000 was announced in 1955.

SOCIAL AND ECONOMIC CONDITIONS. Elementary education is compulsory and free between 7 and 15; in 1946, 23% of the total population was illiterate. Schools in 1953 included 6,250 elementary, 250 secondary and 230 vocational training schools, with total enrollment of 1,120,000. There were 20 institutions of higher learning with 31,500 students.

Most of the population is Greek Orthodox. Clergy of all faiths are paid by the state. The national language, Bulgarian, is closely related to Russian; both employ the Cyrillic alphabet.

Bulgaria is still predominantly agrarian, with most of the population engaged in agriculture. Because of the mountainous character of the country, however, less than half of the land is tilled or used for pasture. Collectivization is well-advanced. More than half the cultivated area is devoted to cereals, including wheat, corn, barley, oats and rye. Other crops are tobacco, alfalfa, cotton, flax, potatoes and sugar. There are extensive vineyards in the southern valleys.

Industries are of minor importance and with few exceptions—tobacco leaf, wines and liquors, fertilizers and flour—are confined to domestic markets. Industrialization is one of the chief aims of the Communist regime, however, and all industries of any importance have been nationalized. Both the first (1948-53) and the second (1953-57) five-year plans emphasized the development of heavy industry.

Foreign trade necessarily consists of the exchange of agricultural products for cheap manufactures. Statistics, in billions of leva, are as follows:

	1946	1948	1950
Exports	14.94	34.10	51.62
Imports	17.51	35.20	38.57

Leading customers in 1950 were the U.S.S.R. (45%) and Czechoslovakia, Hungary, Rumania and Poland (31%). Leading suppliers were the U.S.S.R. (67%) and the four above-named satellites (31%). Tobacco is the principal export. Total trade (exports and imports) was estimated at \$410,000,000 in 1954, including \$370,000,000 with countries of the Communist group.

Although the Danube is navigable along the northern border, only a comparatively small percentage of prewar Danube ship tonnage was Bulgarian. Railroad mileage, all nationalized, totaled 2,670 in 1952; highway mileage was about 15,000 in 1955.

NATURAL FEATURES AND RESOURCES; CLIMATE. Two mountain ranges and two great valleys mark Bulgaria's topography. The Balkan belt crosses the center of the country, almost due east-west, rising to a height of 7,800 feet. The Rhodope range breaks off from the Balkans in the west, curves and then straightens out to run nearly parallel along the southern border. Between the two ranges is the valley of the Maritsa, Bulgaria's principal river. Between the Balkan range and the Danube, which forms most of the northern boundary with Rumania, is the Danubian tableland, traversed by several short rivers. Southern Dobruja, a fertile region of 2,900 square miles below the Danube delta, is an area of low hills, fens and sandy steppes.

Soft coal is Bulgaria's principal mineral; production in 1955 was estimated at 9,900,000 metric tons. Other minerals include chromite, gypsum, iron ore, manganese ore, rock salt and silver.

Bulgaria's climate is characterized by cold winters and warm summers approaching the subtropical in the south. Rain and snowfall average twenty to forty inches a year. Temperatures at Sofia average 28° in January and 69° in July.

Burma (Republic)

Area: 261,757 square miles.

Population (est. 1956): 19,856,000 (1941: Burmans, 60%; Shans, 7%; Chins, 2%; Kachins, 1%; Indians, 6%; Chinese, 1%; Indo-Burmans, 1%; others, 22%).

Density per square mile: 75.8.

President: U Win Maung.

Premier: U Nu.

Principal cities (census 1953)*: Rangoon, 711,520 (capital, chief port); Mandalay, 182,367 (river port, upper Burma); Moulmein, 101,720 (seaport); Bassein, 77,382 (rice, river port).

Monetary unit: Kyat.

Languages: Burmese (70%), English.

Religions: Buddhist, 90%; Mohammedan, 3%; Hindu, 3%; Christian, 2%; others, 2%.

* Preliminary figures.

HISTORY. Lying on the eastern side of the Bay of Bengal between India, China and Thailand, the Union of Burma came into existence as an independent state on Jan. 4, 1948. After that time the new republic had to hold its own with difficulty against attacks on the one hand by Communist rebels seeking its overthrow and on the other by Karen insurgents seeking wider territorial autonomy.

In 1612 the British East India Company sent agents to Burma, and in the 17th and 18th centuries the Burmese stoutly resisted the efforts of British, Dutch and Portuguese traders to establish posts on the Bay of Bengal. Actual British rule dated from 1826, and in 1886 British troops forced the

annexation of all Burma to India. On April 1, 1937, the British separated Burma from India and set it up as a Crown colony with its own legislature and a British Governor.

For hundreds of years a battlefield of petty princes, Burma became a key battleground in World War II largely because the 800-mile Burma Road was the Allies' vital supply line to China. The Japanese invaded the country in Dec. 1941, and by May 1942, had occupied most of it, cutting the road. In Aug. 1942, the Japanese set up a puppet government.

After one of the most difficult campaigns of the war, Allied forces liberated most of Burma prior to the Japanese surrender on Aug. 14, 1945. Civil government was resumed in Oct. 1945, but the native nationalist feeling continued strong.

Following a self-determination agreement with Britain (Jan. 27, 1947), the Constituent Assembly, dominated by the leftist Anti-Fascist People's Freedom League (AFPFL), declared Burma a republic on June 17, 1947, and sovereignty was formally transferred on Jan. 4, 1948.

U Nu became Premier July 19, 1947, upon the assassination of U Aung San. He resigned in favor of Ba Swe on June 5, 1956, but resumed the premiership Feb. 28, 1957. U Win Maung was elected to succeed Ba U as president March 11, 1957.

GOVERNMENT. The Constitution adopted by the Constituent Assembly Sept. 24, 1947, provides for a government headed by the President, who is elected by the two houses of Parliament—the Chamber of Deputies and the Chamber of Nationalities—meeting in joint session. The President appoints the Premier on nomination of the Chamber of Deputies; the Cabinet must enjoy the confidence of the Chamber of Deputies. Four frontier areas—the Shan, Kachin and Karen states, and the Chin special division—are constituent parts of the Union but enjoy some autonomy.

According to incomplete returns, in elections for 250 members of the Chamber of Deputies which were held in Apr. 1956, the AFPFL and allies won 169 seats and the Burma United Front, 46.

The Constitution contemplates a form of state socialism, with the operation of all public utilities and the exploitation of all natural resources to come eventually under state control.

SOCIAL AND ECONOMIC CONDITIONS. In 1955 Burma had 8,951 state and recognized primary schools with 1,096,000 pupils and 625 secondary schools with 146,200 students. Because of the many monastic schools, the percentage of wholly illiterate men is small. The University of Rangoon and the university college of Mandalay had a total of 9,000 students in 1955.

The natives in general are Mongolian; the Burmese are the most advanced. Indians, settled in the Irrawaddy delta region, supply most of the coolie labor, while the Chinese constitute the artisan and merchant class. Buddhism, the national religion, profoundly affects the national character; every village in the country has its temple.

Burma is essentially agricultural, with crop growing concentrated in the delta and river valleys. It is a leading producer of rice, the staple food, which occupies two-thirds of the cultivated area. Output in 1956-57 was 6,464,000 metric tons. Crops grown in the dry zone in upper Burma include millet, cotton, peanuts and sesame. Other crops include tobacco, fruit, vegetables and cereals. The number of rubber plantations has increased; exports in 1956 were estimated at 12,700 metric tons. The principal domestic animals are water buffalo, used as a beast of burden in the delta, and small humped oxen, which predominate in other areas.

Leading industries include silk weaving and dyeing, rice husking, oil refining and wood carving.

Recent trade statistics are as follows (in millions of kyats):

	1952-53	1953-54	1954-55
Exports	1,241.0	1,051.0	1,120.1
Imports	885.5	946.7	905.8

Chief exports in 1954-55 were rice and products (75%) and metals and ores (5%). Leading customers were India (34%), Japan (18%) and Britain (9%); leading suppliers were Britain (24%), Japan (23%) and India (17%).

Recent government finance data, on ordinary and capital account, are as follows (in millions of kyats):

	1952-53*	1953-54*	1954-55*
Revenue	954.6	995.7	1,101.0
Expenditure	1,154.7	1,300.8	1,030.9

* Preliminary.

The principal commercial arteries are the Irrawaddy, navigable for 900 miles to Bhamo, and its tributaries. Regular steamer service is maintained to Bhamo. Railways, designed to supplement river transport, totaled 1,800 miles in 1954, all state-owned. There are no rail connections with India or any other country. The length of roads was 25,000 miles in 1954. The Burma Road connects Lashio, a rail terminus in northern Burma, with Kunming, China.

NATURAL FEATURES AND RESOURCES; CLIMATE. Slightly smaller than Texas, Burma is divided into three natural regions: the Arakan Yoma, a long, narrow mountain range forming the barrier between Burma and India; the Shan Plateau in the east, extending southward into

Tenasserim; and the Central Basin running down to the flat, fertile delta of the Irrawaddy in the south. This delta contains a network of inter-communicating canals and nine principal mouths.

Mineral resources are considerable but, in many cases, undeveloped. Production by the Burmah Oil Company, Ltd., in 1939, was 7,396,000 barrels, but it was only 1,725,000 barrels in 1956. Production of tin (in concentrates) was 930 long tons.

Other minerals include lead, silver, zinc, nickel, cobalt, copper, gold, iron ore, molybdenum, coal, uranium (reported), rubies, sapphires and jade.

More than half of Burma is forested. Teak, valuable for naval construction, is the main timber product. Its cutting is strictly controlled.

Burma forms part of the Asiatic monsoon region, but its climate is modified by the topography. There are three seasons: (1) cool and rainless (November through February); (2) hot and rainless (March through May) and (3) rainy (June through October). At Rangoon the annual temperature range is only 10°; at Mandalay, about 20°. Annual rainfall at Rangoon is about 100 in.; at Mandalay, 33.4 in.

Cambodia (Kingdom)

Area: 67,568 square miles.

Population (est. 1955): 4,358,000.

Density per square mile: 64.5.

Ruler: King Norodom Suramarit.

Premier: San Yun.

Principal cities (est. 1955): Phnompenh, 375,000 (capital); (1941) Battambang, 23,567 (rice).

Monetary unit: Riel.

Languages: Cambodian, French, Annamese.

Religion: Buddhism.

HISTORY AND GOVERNMENT. Cambodia is bounded on the south and east by south Vietnam, on the north by Laos and Thailand, on the west by Thailand and on the southwest by the Gulf of Siam. Its recorded history dates back to the beginning of the Christian era when it was known as Fou-Nan. It was absorbed in about 600 A.D. by the Khmers, under whose rule magnificent temples were built at Angkor. The arrival of the French, who were granted a protectorate in 1863, prevented the annihilation of the Khmer empire by the Vietnamese and Siamese. It was occupied by Japan during World War II.

Cambodia became a constitutional monarchy in 1947 and an associated state in the French Union in 1950. The transfer of sovereignty was completed by the Paris agreements of Dec. 29, 1954. In Sept. 1955, the National Assembly voted to withdraw

from the French Union. Cambodia was admitted to the U. N. in 1955.

Under a Constitution promulgated May 6, 1947, the sovereign exercises executive power through the Cabinet headed by the Premier. Legislative power is vested in an elected Assembly.

The present ruler succeeded to the throne March 3, 1955, on the abdication of his son, Norodom Sihanouk.

SOCIAL AND ECONOMIC CONDITIONS. About 90% of the population is Cambodian, 5% Annamese and 4% Chinese. The forested regions of the northeast are inhabited by various primitive peoples.

Agriculture is the basis of the economy. The chief crop is rice, grown principally in the Battambang area (production 1956-57: 1,200,000 metric tons). Second in importance is rubber (1956: 32,000 tons). Other crops include tobacco, kapok, cotton, pepper and maize. Cattle breeding is of major importance. Native industries include silk and cotton weaving, rice milling and the salting of fish obtained from Lake Tonle Sap during the low-water season.

Recent foreign trade data are as follows (in millions of riels):

	1954	1955	1956
Exports	2,188	1,397	1,240
Imports	1,750	1,541	1,980

Leading exports include rice, rubber, animal products, wool and hides and skins. A large part of the trade is with France, the U. S. and Vietnam.

There are about 875 mi. of navigable waterways; small steamers can reach Phnompenh on the Mékong. A railroad runs from Phnompenh to the Thai frontier.

NATURAL FEATURES AND RESOURCES; CLIMATE. Cambodia consists chiefly of a large alluvial plain ringed in by mountains and on the east by the Mékong river. The plain is centered on Lake Tonle Sap, which is a natural storage basin of the Mékong.

Forests cover about 75% of the country, but most are unexploited. Deposits of iron ore, limestone and phosphate exist but also are undeveloped.

The climate is tropical and resembles that of many monsoonal countries, with a dry season from December through May and a wet season from June through November.

Chile (Republic)

(República de Chile)

Area: 286,396 square miles.

Population (est. 1956): 6,941,000.

Density per square mile: 24.2.

President: Carlos Ibáñez del Campo.

Principal cities (census 1952): Santiago, 1,348,283 (capital); Valparaíso, 218,829 (port); Concepción, 119,887 (farming cen-

ter); Viña del Mar, 85,281 (resort center); Antofagasta, 62,272 (nitrates).

Monetary unit: Peso.

Language: Spanish.

Religion: Roman Catholic.

HISTORY. Chile has had a relatively tranquil history amid its neighbors' long record of strife, but it has suffered repeated labor disturbances in recent years.

Europeans first arrived in 1536, when Diego de Almagro, an associate of Pizarro, led an unsuccessful invasion from Peru. Five years later another Spaniard, Pedro de Valdivia, founded Santiago. On Sept. 18, 1810, Chile rebelled against Spanish rule, but independence was not won completely until 1818, when Bernardo O'Higgins and José de San Martín finally crushed the Spanish armies.

Chile, which has never lost a war, fought with Bolivia and Peru in 1879-83 and won the province of Antofagasta, Bolivia's only outlet to the Pacific, as well as extensive areas from Peru. In World War I, Chile was neutral. The overthrow in 1931 of Colonel Carlos Ibáñez, who had seized power in 1927, was followed by a brief chaotic period in which seven Presidents tumbled in and out of office, but Dr. Arturo Alessandri (1932-38) did much to restore Chile's political and economic order.

Pedro Aguirre Cerda, victor in the 1938 elections, initiated an extensive Socialist program before his death on Nov. 25, 1941. Under both external and internal pressure, the latter notably from its strong Communist party, Chile broke relations with the Axis on Jan. 20, 1943; however, it did not declare war on Japan until Feb. 14, 1945.

Juan Antonio Ríos, who succeeded Aguirre, died on June 27, 1946. Following a special election, Gabriel González Videla, candidate of a leftist-center coalition, became President on Nov. 3, 1946. His administration was plagued by recurrent labor disputes, some of which were said to be Communist-inspired. He pursued a strong anti-Communist policy. Carlos Ibáñez was elected to succeed him Sept. 4, 1952.

GOVERNMENT AND DEFENSE. The nation elects a President every six years, a Senate of forty-five members every eight years (one half renewable every four years) and a Chamber of Deputies of 147 members every four years. The President is assisted by a Cabinet responsible to him but subject to impeachment by Congress, which also may override a presidential veto by two-thirds vote. All literate citizens over twenty-one may vote in elections.

Military service is compulsory, beginning at twenty with an initial training period of nine months, after which a civilian is on reserve until the age of forty-five. The navy had in 1956 one old battleship of 28,000 tons, two light cruisers (acquired

from the U. S. in 1951), six destroyers, six frigates, three submarines, two coast defense ships and smaller craft. The air force was expanded during World War II.

SOCIAL AND ECONOMIC CONDITIONS. Education, free and compulsory between 7 and 15, is directed by the central government. In 1943, illiteracy was estimated at 24 per cent, third lowest in Latin America. In 1952 there were 6,851 primary schools and kindergartens with 819,403 pupils and 332 secondary schools with 86,652 pupils. There are five universities.

Chilean agriculture is mostly confined to the temperate central valley, similar to that of California. The available productive land is extremely limited, and most of it must be irrigated. Wheat (1955-56: 1,048,000 metric tons) is the leading crop, followed by potatoes, oats, barley, corn, string beans and fruits. Grapes, next to wheat in acreage, produced an estimated 118,800,000 gallons of wine in 1956. Feudal-type estates, averaging 2,500 acres, predominate. Cattle in 1955 totaled 2,596,000 and sheep 6,540,000. Wool production (1956) was about 10,000 metric tons (clean).

Foreign trade (in millions of U. S. dollars):

	1954	1955	1956
Exports	401	472	542
Imports	343	376	354

In 1955 the leading customers were the U. S. (42%), Britain (17%), Germany (10%) and Argentina (10%); leading suppliers, the U. S. (43%), Germany (11%), Argentina (11%) and Peru (8%). Chief exports were copper (65%) and nitrate of soda (11%). Leading imports were industrial oils, chemicals and paints (17%), machinery (15%) and transport materials (14%).

Except for mineral processing, most manufacturing is of low-priced consumer's goods, particularly textiles. A steel industry was established in 1946; production for the year 1955 amounted to about 309,000 metric tons.

Highway mileage totaled approximately 30,000 in 1954, about a third improved. Rail mileage is 5,400, partly electrified. Civil aviation is highly developed in the interior, and several international lines serve the country. According to *Lloyd's Register*, the merchant marine had 109 vessels (100 tons and over) aggregating 248,505 gross tons on June 30, 1956.

Recent financial data are as follows (in billions of pesos):

	1955*	1956*	1957†
Revenue	137.9	204.9	221.1
Expenditure	156.0	230.7	256.2

* Preliminary. † Budget estimate.

Funded external debt on Dec. 31, 1953, was £17,440,974, \$106,595,500 and 85,832,400

Swiss francs; direct internal debt (Dec. 31, 1955), 29,373,800,000 pesos.

NATURAL FEATURES AND RESOURCES; CLIMATE. A narrow, mountainous land, Chile has one-third of its area covered by the towering ranges of the Andes. In the north is the mineral-rich Atacama Desert, between the coast mountains and the Andes. In the center is a 700-mile-long valley, thickly populated, between the Andes and the coastal plateau. In the south, the Andes border on the ocean.

At the southern tip of Chile's mainland is Punta Arenas, the southernmost city in the world, and beyond that lies the Strait of Magellan and Tierra del Fuego, an island divided between Chile and Argentina. The Juan Fernández Islands, in the South Pacific about 400 miles west of the mainland, and Easter Island, about 2,000 miles west, are Chilean possessions.

The basis of the country's economy is its mineral resources in the northern desert provinces of Atacama, Antofagasta and Tarapacá, where the only natural nitrate in the world is found. Some 60 per cent of the world's iodine is obtained as a by-product of nitrate processing. Chile's world monopoly in nitrate, however, declined in importance with development of the synthetic product.

The world's largest copper reserve, estimated at 134 billion pounds, is in Chile, and also more than 900 million tons of high grade iron ore. The reserve of Chilean coal, noted for quantity rather than quality, exceeds two billion tons.

Production figures are as follows (in thousands of metric tons):

	1954	1955	1956
Coal and lignite	2,267.3	2,308.9	2,277.6
Copper	363.7	433.5	489.6
Gold *	125.0	122.9	94.5
Iron ore	2,199.0	1,536.9	....
Nitrate of soda	1,574.3	1,540.2	1,159.2
Petroleum†	1,740.0	2,577.0	3,547.0
Silver*	1,489.0	1,714.5	1,821.8

* Thousands of ounces. † Thousands of barrels.

Mercury, manganese ore, cobalt, zinc, tungsten and molybdenum also are produced, and deposits of uranium have been reported.

Forests, estimated to cover 35 million acres in the southern provinces, yield a variety of commercial wood.

In Chile's extreme north the days are hot, the nights warm on the coast and cool in the interior. Central Chile's climate is comparable to that of southern California, and southward in the lake regions the climate is similar to that of the U. S. Pacific Northwest. In the extreme south, fogs and storms keep the mean temperature low.

China (Republic) (Chung-Hua Min-Kuo)

Area: 3,911,209 square miles.*

Population (census 1953): 590,194,715.*

Density per square mile: 150.9.

President, Nationalist China: Generalissimo Chiang Kai-shek.

Premier: O. K. Yul.

Chairman, Communist China: Mao Tse-tung.

Premier: Chou En-lai.

Principal cities (census 1953): Shanghai, 6,204,417 (chief port, industrial and financial center); Peking (Peiping), 2,768,149 (capital, Communist China); Tientsin, 2,693,831 (commercial center); (est. 1952) Chungking, 2,000,000 (river port, trade center); Mukden, 1,790,000 (Manchurian industrial center); Canton, ~1,210,000 (southern commercial center); Wuhan, 1,090,000 (river port); Nanking, 1,020,000 (former Nationalist capital).

Monetary unit: Chinese dollar (yuan).

Language: Chinese.

Religions: Principally Confucian, Buddhist and Taoist.

* Including Province of Formosa (Taiwan), Manchuria and Tibet. Census not taken in Formosa (population estimated at 7,591,298); population total excludes an estimated 11,743,320 Chinese resident abroad. The total population figure is regarded with considerable reserve.

HISTORY. By 2000 B.C., the Chinese were living in the Hwang Ho basin, and they had achieved an advanced stage of civilization by 1200 B.C. The great philosophers, Lao-tse, Confucius, Mo Ti and Mencius lived during the Chou dynasty (about 1122 to 249 B.C.). The warring feudal states were first united under Emperor Ch'in Shih Huang Ti, during whose reign (246-210 B.C.) work was begun on the Great Wall. Under the Han dynasty (206 B.C. to A.D. 220) China prospered and traded with the West.

The T'ang dynasty (618-907) has often been called the golden age of Chinese history. Painting, sculpture and poetry flourished under royal patronage, and printing made its earliest known appearance.

The Mings, last of the native rulers (1368-1644), overthrew the Mongol or Yuan dynasty (1280-1368) established by Kublai Khan, whose dominions extended into eastern Europe. The weakening Mings in turn were overthrown in 1644 by invaders from the north, the Manchus.

The Chinese closely restricted foreign activities, and by the end of the 18th century only Canton (and the Portuguese port of Macao) were open to European merchants. Following the Anglo-Chinese War of 1839-42, however, several treaty ports were opened and Hong Kong was ceded to Britain. Treaties signed after further hostilities (1856-60) weakened Chinese sovereignty and removed foreigners from Chinese jurisdiction. The disastrous Chinese-Japanese War of 1894-95 was followed by a scramble for Chinese leases and concessions by European powers which

resulted in the Boxer Rebellion (1900), suppressed by an international force.

The death of the Empress Dowager Tzu Hsi in 1908 and the accession of the infant Emperor Hsian T'ung (Pu-Yi) were followed by a nation-wide rebellion led by Dr. Sun Yat-sen, who became first President of the Provisional Chinese Republic in 1911. The Manchus abdicated on Feb. 12, 1912. Dr. Sun resigned in favor of Yuan Shih-k'ai, who suppressed the republicans but was forced by a serious rising in 1915-16 to abandon his intention of declaring himself Emperor. Yuan's death in June 1916, was followed by years of civil war between rival militarists and Dr. Sun's republicans. The death in 1925 of Dr. Sun, who had controlled only the Canton area in opposition to the recognized regime, was followed by a revival of the Kuomintang party, which practically deified him. Nationalist forces, led by Gen. Chiang Kai-shek and advised originally by Communist experts, soon occupied most of China, setting up a Kuomintang regime in 1928. Internal strife continued, however, and Chiang broke with the Communists.

An alleged explosion on the South Manchurian Railway on Sept. 18, 1931, brought invasion of Manchuria by Japanese forces, who installed the last Manchu Emperor, Henry Pu-Yi, as nominal ruler of the puppet state of "Manchukuo." Japanese efforts to take China's northern provinces in July 1937, were resisted by Chiang Kai-shek, who meanwhile had succeeded in uniting most of China behind him. Within two years, however, Japan seized most of the ports and railways. The Kuomintang government retreated first to Hankow and then to Chungking, while the Japanese set up a puppet government at Nanking headed by Wang Ching-wei.

When the Japanese surrendered in 1945, China signed a treaty with the Soviet Union providing for Soviet withdrawal from Manchuria, joint Chinese-Soviet control of Manchurian railways for 30 years, a joint Chinese-Soviet naval base at Port Arthur and a free port at Dairen.

The surrender of Japan also touched off a civil war between Nationalist and Communist forces for control of China. By the end of 1949, all of the republic except the island of Formosa was under Communist control. Barricaded on Formosa, the Nationalist regime had little means at its disposal to make any effective counter-attack upon the mainland. The U. S., however, after the outbreak of the Korean war in June 1950, promised naval and air aid to repel any invasion of Formosa.

The Communists meanwhile set up in September 1949, a soviet-type government. After prolonged negotiations, the People's government and the Soviet Union signed a

30-year treaty of friendship and mutual aid on Feb. 14, 1950; its published terms provided for return of the Changchun railroad to China and the eventual return of Port Arthur and Dairen.

The Communist regime subsequently was recognized as the legal government of China by many nations but was unsuccessful in its efforts to secure a place in the U. N. It threw several hundred thousand men into the Korean war of 1950-53 in a futile effort to drive U. N. forces from Korea.

GOVERNMENT AND DEFENSE. Under the Nationalist Constitution of 1947, the highest state organ is the National Assembly, which meets once each three years and is the "sovereign organ of the people." Its members are elected for 6-year terms on the basis of territorial and professional representation. The Assembly elects the President and Vice President of the Republic for 6-year terms. The organs of government include the Executive Yüan (Cabinet), whose members, headed by the Premier, are appointed by the President with the concurrence of the Legislative Yüan and the Legislative Yüan, which exercises legislative functions when the Assembly is not in session and has ultimate control over the cabinet.

The definitive Constitution of the People's republic, adopted by the National People's Congress on Sept. 20, 1954, established the Congress as the highest organ of state power. Its 1,226 members are elected for a 4-year term by local government bodies, the armed forces and Chinese resident abroad. Executive power is vested in the Chairman or President, elected for a 4-year term by the Congress. He appoints the Premier and his Cabinet. The Cabinet, the highest administrative organ, consists of 35 ministers. Effective control is exercised throughout by the central committee of the Chinese Communist party.

Defense. Military service is compulsory in Nationalist China; the initial training period is one or two years. The fighting strength of Chiang's army in 1956 was upwards of 600,000 men. The air force had about 500 planes and the navy, some 100 small vessels.

The chairman is commander-in-chief of the Communist armed forces. In 1956 they numbered about 2,700,000 divided into several field armies. The air force had about 2,000 Soviet-built planes, about half of them jet fighters. The navy had about 30 major vessels, including 13 submarines.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Emphasis on the mainland is upon technical training and inculcation of the Communist ideology. In 1956 there were reported to be about 62,000,000 primary school students, 5,000,000 secondary

school students and 380,000 college and university students.

The mass literacy movement has been accompanied by the replacement of the old classical or "dead" Chinese language with the popular vernacular (Pai-hua) of the Mandarin dialect, employing perhaps 1,000 of the most essential of the many thousands of Chinese ideographs. Plans were approved in 1956 but apparently abandoned later for the introduction of a modified Latin alphabet to replace the ideographs.

Agriculture. In China, nearly 80 per cent of the population depends on the land for livelihood. Subsistence crops are necessarily emphasized, but China is still not self-sufficient in food. Cultivation is intensive, holdings are small, and irrigation is widely practiced. The three most important food crops are rice, wheat and maize; total grain production was officially estimated at 180,000,000 metric tons in 1955.

In northern China, wheat, barley, corn, sorghum, millet and other cereals, and beans and peas predominate, whereas in the south, rice, sugar and indigo are most important. The Yangtze basin, one of the most favored agricultural regions in the world, is China's premier granary. Tea, the chief beverage, is grown mainly in the central uplands, coastal ranges and Szechwan.

Silkworm culture is practiced widely, especially in the lower Yangtze valley. Production of cotton, the major purely industrial crop, totaled 1,317,000 metric tons in 1955. Soybeans are of ever-increasing importance. Other crops include fibers, tobacco, vegetable oils, cane sugar and many medicinal plants and spices.

The urgent need for subsistence crops has confined grazing grounds for sheep and cattle to the dry northwest and to mountain pastures. However, such animals as goats, poultry and especially pigs are raised everywhere. According to unofficial estimates, Communist China had in 1953 28,812,000 cattle, 17,190,000 sheep, 77,376,000 hogs, 34,110,000 goats and 11,885,000 buffalo.

Industry. Industrially, China is still in its infancy. Development has been mainly in the erection of textile mills, silk and flour mills, match factories, tanneries and a few steel and cement mills. The production of consumer's goods far exceeds that of producer's goods, which must still be imported.

The Communist regime is reported to be concentrating upon Manchuria as China's industrial center and to be shifting some industries to the northwest.

The first five-year plan (1953-57) had as its chief aim the collectivization of agriculture and the building of a preliminary foundation for industrialization. The

second five-year plan (1958-62), approved in Sept. 1956, emphasizes industrialization and especially heavy industry. Steel production in 1955 was 2,567,000 metric tons; the revised 1957 target was 5,500,000 tons and the 1962 target 10,500,000-12,000,000 tons.

Trade. According to official reports, the U.S.S.R. and its satellites accounted for 80% of Communist China's total trade in 1956. The 1952 trade total was unofficially estimated at U. S. \$2,000,000,000, and the 1953 total was officially placed at 36% more than that in 1952. Major exports include textiles and products, tung oil and pig bristles.

Communications. Exploitation of many of China's natural resources has been handicapped by the lack of internal communications. There is an extensive system of inland waterways and canals, however, and in central and south China most of the freight is carried by water.

The modern highway system now totals about 90,000 miles. The railway system of 16,500 mi. (Dec. 1955), concentrated in the lower Yangtze basin and in north China and Manchuria, has been rehabilitated and is being extended by the Communists. The main port is Shanghai.

Finance. The 1955 Communist budget estimated revenue at 31,192,520,000 people's yuan (2.37 yuan = U. S. \$1) and expenditure at 29,736,720,000 yuan. The Nationalist government on Formosa continued to depend on U. S. aid to balance its budget.

NATURAL FEATURES AND RESOURCES; CLIMATE. China has about 1¼ times the area of the continental United States. Its coast line is roughly a semi-circle, about 2,150 miles long. The greater part of the country is mountainous, and only in the lower reaches of the Hwang Ho (Yellow) and Yangtze Kiang rivers are there extensive low plains.

The principal mountain ranges are the Tien Shan, to the northwest; the Kunlun chain, which attains a maximum height of 23,890 feet, running south of the Takla Makan and Gobi deserts; and the Trans-Himalaya, connecting the Kunlun with the borders of China and Tibet. Manchuria is largely an undulating plain connected with the north China plain by a narrow lowland corridor. Inner Mongolia contains the relatively fertile southern and eastern portions of the Gobi. The large island of Hainan (13,500 sq. mi.) lies off the southern coast.

Hydrographically, China proper consists of three great river systems. The northern part of the country is drained by the Hwang Ho river, 2,700 miles long and mostly unnavigable. The central part is drained by the Yangtze Kiang, the fifth

longest river in the world (3,100 mi.). The Si Kiang in the south is about 1,650 miles long and navigable for a considerable distance. In addition, the Amur forms part of the northeastern boundary.

Minerals. Mineral resources are considerable. Iron ore, far less plentiful than coal, is mined principally in the lower Yangtze valley and in north China. Tin, mined in Yunnan and southwest Szechwan, has been a major mineral export. Of some rarer minerals, notably antimony and tungsten, China is sometimes the world's leading producer. Lead, zinc, silver, mercury and gold are also mined, and discovery of uranium has been reported. Mineral production in 1955 was estimated as follows: coal, 94,043,000 metric tons; iron ore, about 8,700,000 tons; tin (in ore), 11,500 tons; tungsten concentrates, 18,000 tons; petroleum, 3,500,000 barrels.

Forest and Fisheries. China urgently needs reforestation. Most remaining forests are on inaccessible mountain slopes. Bamboo is cultivated in groves throughout the country south of the Tsinling mountains. Both sea and river fisheries are rich and varied, and fresh or salted fish is a staple food in many districts.

Climate. There are great diversities of climate. North China has the coldest winters in the world for its latitude (23.5° average in January at Peiping). The Yangtze valley is warmer, with winter temperatures more like those of Britain, while the south has warm subtropical winters. Summer temperatures are uniformly hot throughout China (about 79° in July at Peiping and 82° at Hong Kong). South China receives regular rainfall averaging from 40 to 60 inches annually, but in the north rainfall is irregular and not as heavy; droughts and floods are common.

FORMOSA (TAIWAN)—Status: Province (Part of Republic of Nationalist China).

Area: 13,885 square miles.

Population (census 1956, excluding troops and militia): 9,310,158.

Principal cities (est. 1955): Taipei, 677,159 (capital); Kaohsiung, 341,740 (seaport, industrial center); Tainan, 268,243 (agricultural products).

Foreign trade (1956): exports, U. S. \$130,060,000 (35% to Japan); imports, U. S. \$114,360,000* (56% from Japan). Chief exports: sugar (59%), rice (10%), canned pineapple (5%).

Agricultural products (est. 1956, in metric tons): sugar, 795,000; rice (paddy), 1,787,000; tea, 14,500; bananas, pineapples, sweet potatoes.

Manufactures (1956): cement, 573,917 metric tons; cotton cloth, 130,000,000 sq. yd.; paper, 42,000 tons; aluminum, 8,700 tons; steel bars, 67,900 tons.

Minerals: coal (1956: 2,550,000 metric tons), gold, petroleum, silver, sulfur.

* Excludes U. S. aid imports (\$95,374,000) and those with self-provided exchange (\$16,580,000).

Formosa is a large island in the western Pacific, separated from China to the west by the Taiwan straits (narrowest point, 90 mi.). The Pescadores (Bokoto) and other outlying islands (about 78 sq. mi.) became administratively a part of Formosa under Japanese rule. Formosa, ceded to Japan in 1895 after the Chinese-Japanese War, remained Japanese until it was restored to China in 1945, in accordance with the Cairo conference of 1943. It was the only territory under the control of the Nationalist regime after 1949. Under a 1955 mutual defense treaty the U. S. is committed to defend Formosa and the Pescadores. U. S. aid has been a major factor in the Formosan economy since 1949.

Formosa's internal affairs are administered by the provincial government headed by the Governor appointed by the Nationalist government. The provincial assembly is elected by direct popular vote.

Most of the inhabitants are of Chinese stock. There are also about 180,000 aboriginal tribesmen in the interior.

Formosa is essentially an agricultural country with the greater part of the population dependent on farming. It is self-sufficient in most basic foodstuffs and produces surpluses of a number of others, notably rice and sugar. Farms are generally small (average 3 ac.). Cattle and water buffalo are the chief livestock.

Food processing is the island's major industry; it engaged over 6,000 plants in 1955. The textile industry is expanding, and industrial potential was increased by the first four-year program (1953-56).

The island is one of the world's chief sources of camphor, and government monopolies of camphor, salt, opium and tobacco have been established. Forest resources are enormous. Railway mileage totaled (1956) 2,800 and roads (1953) 16,380.

Formosa is divided by a central mountain range running from north to south, which rises sharply on the east coast and declines gradually to the broad western plain, where cultivation is concentrated.

The climate is tropical, with temperatures above 60° (except in mountain areas) every month except January.

TIBET—Status: Nominally independent; under Chinese Communist control.

Area: 469,413 square miles.

Population (census 1953): 1,273,969.

Capital: Lhasa (about 20,000).

Ruler: The 14th Dalai Lama (Lingerh Pamo Töntrup).

Monetary unit: Sang.

Exports: wool, live animals, salt, hides, borax, tea, musk.

Agricultural products: barley, fruits, pulse, vegetables.

Minerals: borax, salt, coal, gold.

Tibet, north and northeast of the Himalayas, is the highest country in the world, averaging 16,000 feet in elevation and having many peaks ranging up to more than 25,000 feet. Chinese suzerainty over Tibet was established in the 18th century. The area was invaded by a British expeditionary force in 1904, but the Anglo-Russian Convention of 1907 recognized China's influence and stipulated that neither Russia nor Britain should interfere in Tibet's affairs.

Chinese Communist troops invaded the area in October, 1950. An agreement signed with Communist China in May, 1951, recognized the Dalai Lama as spiritual and temporal ruler but made Tibet virtually a Chinese province.

The religion and predominant factor in Tibet's social system is Lamaism, a late form of Buddhism modified by animism and primitive magic. Education is in the control of the many monasteries, some of which have more than 1,000 monks. A large number of the population are lamas, mostly celibates. Both polyandry and polygyny are practiced.

The climate is extremely variable. Total yearly precipitation in most of the country is only about 8 inches.

Colombia (Republic) (República de Colombia)

Area: 439,519 square miles.

Population (est. 1956): 12,939,000 (mestizo 68%; white, 20%; Indian, 7%; Negro, 5%).

Density per square mile: 29.4.

President: Maj. Gen. Gabriel Paris (chairman of ruling junta).

Principal cities (est. 1954): Bogotá, 765,360 (capital); Medellín, 431,380 (mining); Cali, 365,800 (coffee, mining); Barranquilla, 324,700 (seaport); Cartagena, 142,800 (seaport); Bucaramanga, 136,170 (industrial center).

Monetary unit: Peso.

Language: Spanish.

Religion: Roman Catholic.

HISTORY. Colombia, nearly nine times the size of New York state, is the only country in South America with frontage on both the Pacific and the Caribbean. Its northern coast was one of the first parts of the Americas to be visited by Spanish explorers. Darien, the first permanent European settlement on the American mainland, was founded in 1510, Santa Marta in 1525, and Bogotá in 1538.

New Granada, as Colombia was called until 1861, was comparatively neglected during the Spanish colonial era. After winning independence from Spain during a fourteen-year struggle ending in 1824, the country established a republic in 1831, including the area that now is Panamá. In-

termittent civil war plagued Colombia until 1903, when Panamá, with United States backing, seceded from the republic.

The century-old boundary dispute with Peru over Leticia almost led to war in 1931, but a settlement was arranged through the League of Nations in 1934-35.

Bogotá was swept by a destructive but unsuccessful revolt on April 9, 1948, following the assassination of Jorge Eliécer Gaitán, extremist Liberal leader. The 1949 presidential election, held on Nov. 27 and boycotted by the Liberals, was won by Conservative Laureano Gómez. Gómez returned to office on June 13, 1953, after being on leave of absence since Oct. 1951, but was immediately ousted in a *coup d'état* led by Lt. Gen. Gustavo Rojas Pinilla, who became President. Rojas was ousted by military leaders May 10, 1957, after trying to continue himself in office for a second term.

GOVERNMENT AND DEFENSE. Colombia's President, who appoints his own Cabinet, is elected every four years and is not eligible to succeed himself immediately. The Senate—upper house of Congress—has 63 members elected for four years by direct vote. The House of Representatives of 123 members is directly elected for two years. Congress was superseded temporarily by a national constituent assembly in 1954. All citizens over 21 are entitled to vote.

A term of military service is compulsory for men between twenty-one and thirty. The strength of the peacetime army averages about 13,000-14,000. With 2,500 personnel, the navy has two modern destroyers, one sea-going gunboat, three patrol craft, three frigates, six river gunboats and several launches. An infantry battalion and two frigates served in Korea.

SOCIAL AND ECONOMIC CONDITIONS. Primary education is free and technically compulsory. Illiteracy (7 years and over) was officially placed at 37% in 1951. By law, 10 per cent of the national budget goes for education. In 1954, 14,744 primary schools reported enrollment of 1,125,350 pupils, 620 secondary schools 69,947 and 218 commercial schools 17,379. In addition to the national University, founded at Bogotá in 1572, there were 21 other universities and 22 institutes and schools of higher learning with a total of 11,996 students.

Because of the former isolation of the interior, the language and manners in Bogotá are more purely Castilian than anywhere else in South America.

In recent years, notably since adoption of a new labor code (1944), the working classes have made important gains, including minimum wages, vacations and holidays, accident and sickness benefits, and the protected right of union organization.

Most of the people live by farming and cattle herding, but only a small part of the land is cultivated, and that by primitive means. Colombia's coffee, the nation's principal crop, is a mild variety that does not compete with Brazilian types. Production in 1956-57 was about 7,200,000 bags of 132 pounds each. Other crops include bananas, coconuts, tobacco, sugar cane, corn, cotton, cacao, beans, rice, tropical fruits and, in the temperate regions on plateaus and in mountain valleys, cereals and potatoes. Cattle numbered 12,100,000 in Dec. 1955, according to U. S. government estimates.

The leading manufacturing industries are foodstuff processing, textiles and beverages. A new steel plant went into operation late in 1954; production in 1955 was 92,939 metric tons.

Recent trade statistics, in millions of pesos, are as follows:

	1954	1955	1956
Exports	1,642.8	1,459.7	1,343.9
Imports	1,679.4	1,673.2	1,638.8

Leading exports in 1956 were coffee (77%), petroleum (13%) and bananas (5%). Leading customers were the U. S. (71%), Germany (7%), Netherlands Antilles (5%) and Sweden (3%); leading suppliers, the U. S. (62%), Germany (12%), Britain (3%) and France (3%).

Difficult terrain makes Colombia's rail and road building costly. Rail mileage was put at 1,854 (main-line track) in 1954; and improved highway mileage at 15,365. Air transit is well advanced, and there are 4,620 miles of navigable waterways.

Colombia's 1957 budget provided for expenditures of 1,227,368,125 pesos. On Dec. 31, 1956, the internal debt was 494,685,000 pesos and the foreign debt (excluding interest) the equivalent of 249,777,000 pesos.

NATURAL FEATURES AND RESOURCES; CLIMATE. Through the western half of the country, three Andean ranges run north and south, merging into one at the Ecuadorean border. The eastern half is a low, jungle-covered plain, drained by spurs of the Amazon and Orinoco, inhabited mostly by uncivilized Indians. The fertile plateau and valley of the eastern range is the most densely populated part of the country.

Rich in minerals, Colombia has the third largest oil industry in Latin America (70 per cent controlled by U. S. interests). Production in 1956 was 44,130,000 barrels. The country is also rich in platinum and has world-famous emerald mines at Muzo in the eastern Andes. Mineral production includes gold (1956: 438,350 troy oz.), silver (110,729 oz.) and crude platinum (exports 1956: 26,215 oz.).

Colombian forests, covering a large part

of the country from the western Andes to the eastern plain, are a great but little exploited source of wealth. Products include vanilla, quinine, ipecac, sarsaparilla, gums and balsams, tanning agents, dyewoods, hardwoods and rubber.

Alligators along many of the large rivers are hunted for hides. The rivers and lakes abound with fish and turtles, a source of commercial tortoise shell.

Although Colombia lies almost entirely in the north torrid zone, its climate is tempered by prevailing winds and high altitudes in the western, mountainous area. High temperatures and excessive moisture prevail in the lower areas, along the coast and in the larger river valleys. At Bogotá, the mean temperature stays in the 50's every month of the year; annual rainfall there is 42 inches.

Costa Rica (Republic) (República de Costa Rica)

Area: 19,695 square miles.

Population (est. Dec. 31, 1956): 1,014,170 (1950: white and mestizo, 97.6%; Negro, 1.9%; Indian, .4%; Asiatic, .1%).

Density per square mile: 51.5.

President: José Figueres Ferrer.

Principal city (est. Dec. 31, 1956): San José, 99,747 (capital and only large city).

Monetary unit: Colón.

Language: Spanish.

Religion: Roman Catholic (state).

HISTORY AND GOVERNMENT. Costa Rica was discovered and probably named by Columbus in 1502. A Spanish province as early as 1530, it proclaimed its independence in 1821, and was a member of the Central American Union from 1823-38. Aside from boundary disputes with Panamá and Nicaragua, Costa Rica's modern history was comparatively tranquil until the spring of 1948, when a brief civil war followed congressional annulment of presidential elections in which Otilio Ulate Blanco defeated the Government candidate. Leftist-supported government forces surrendered and an 11-man junta took over. A Constituent Assembly was elected on Dec. 8, 1948. The Assembly met on Jan. 16, 1949, confirmed Ulate as President-elect, and, after drafting a new Constitution, dissolved on Nov. 8, on which date Ulate took office. José Figueres Ferrer was elected to succeed him in July 1953.

Under the 1949 Constitution the President and one-house Congress of 45 members are popularly elected for terms of four years.

The army was abolished in 1950. There is a police force of 1,000 and 700 coast guardsmen.

SOCIAL AND ECONOMIC CONDITIONS. Costa Rica's illiteracy rate (estimated at

21.2% in 1950) is the lowest in Central America, with elementary education free and compulsory. In 1954 there were 1,293 primary schools (137,941 pupils) and 39 secondary and teachers' schools (12,708 pupils). The National University is at San José. The English language is taught in all of the primary schools.

Coffee, bananas, abacá fiber and cacao are the basic products of Costa Rican agriculture, which is characterized by the prevalence of small land holdings. Cotton, sugar cane, tobacco, corn, beans, rice and potatoes are subsidiary crops. Cattle are raised mainly for dairying.

Coffee production totaled 600,000 bags of 132 lb. each in 1956-57 (preliminary).

Manufacturing is virtually limited to locally consumed products. Chief among those products are furniture, fine woodwork and tobacco.

Foreign trade data (in millions of U. S. dollars) are as follows:

	1954	1955	1956
Exports	84.70*	80.90*	63.57
Imports	80.65	87.47	91.23

* Banana valuation adjusted.

Leading customers in 1956 were the U. S. (48%), Germany (32%) and Canada (5%); leading suppliers, the U. S. (54%), Germany (9%) and Britain (6%). Leading exports were coffee (53%), bananas (34%) and cacao (5%); imports included textiles, machinery, vehicles and petroleum products.

In 1955 the rail system totaled approximately 800 miles; highways, 1,554 miles, of which 497 miles were paved. According to *Lloyd's Register*, the merchant marine had 152 vessels (100 tons and over) aggregating 507,706 gross tons on June 30, 1956.

Recent public finance data are as follows (in millions of colones):

	1955	1956	1957*
Revenue	261.8	257.2	275.2
Expenditure	248.6	256.1	275.2

* Budget estimate.

The public debt (Dec. 31, 1956) was 350,564,204 colones, of which 130,650,313 colones represented the external debt.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of Costa Rica is tableland, from 3,000 to 6,000 feet above sea level, with sharp slopes to the Caribbean and Pacific. Cocos Island (10 sq. mi.) about 300 miles off the Pacific Coast, is under Costa Rican sovereignty; although it is mostly tropical jungle, it is of potential strategic importance in the defenses of the Panama Canal.

Gold is the most valuable mineral, although silver, manganese, mercury and sulfur also exist. Oil was discovered in 1956.

oslovakia's Teschen area, and Hungary had taken areas in Slovakia and Ruthenia. In March 1939, the Nazis set up Slovakia as a puppet state, declared Bohemia and Moravia to be Nazi protectorates, and gave Hungary the remainder of Ruthenia. Both Slovakia and Bohemia-Moravia were occupied by German troops. Beneš organized a government-in-exile in London in 1940.

Soon after the government returned to Czechoslovakia in April 1945, Ruthenia, the easternmost province, was ceded to Russia. On July 3, 1946, Communist Klement Gottwald formed a six-party coalition Cabinet. Amid increasing pressure from Moscow, Gottwald's Cabinet remained in office until a bloodless *coup d'état* of Feb. 23-25, 1948, when the Communists seized complete control. President Beneš resigned June 7 following parliamentary elections in which the Communists and their allies were unopposed. Parliament elected Gottwald to the presidency, and Communist Antonín Zápotocký succeeded to the premiership. On the death of Gottwald Mar. 14, 1953, Zápotocký became President and Viliam Široký was named Premier.

GOVERNMENT AND DEFENSE. Czechoslovakia's Soviet-type Constitution, promulgated on June 3, 1948, makes the 300-member unicameral Parliament the supreme organ of the state with control over courts and civil service. The government is headed by the President, elected by Parliament for a seven-year term, and the Prime Minister and his Cabinet who are appointed by the President but are responsible to Parliament. The Constitution contains nominal guarantees of civil liberties and provides that the state shall conduct all economic activity in the public interest on the basis of a single economic plan. Provision is made for limited Slovak autonomy under an elected council of 100 members.

The army, based on a cadre of Czech units which fought with the Red Army during World War II, has been trained and equipped by the Soviet Union with organization and armament on its pattern. Estimated strength is over 250,000, including police.

SOCIAL AND ECONOMIC CONDITIONS. Illiteracy is low in Bohemia, higher in Slovakia, and probably less than 2% for the whole country. In 1953 there were 9,045 elementary schools with 1,030,000 pupils, 2,745 higher grade schools with 473,000 and 304 secondary schools with 80,300. Vocational pupils numbered 113,000. The 17 institutions of higher learning had 42,000 students.

Nationalization of all enterprises with more than 50 employees as well as concerns of any size operating in key industries was completed between 1945 and 1948. Distribution of large estates had

already been accomplished by the 1919 Land Reform Law. Total collectivization of agriculture was the professed aim of the Communist regime.

Sugar beets, wheat, corn and high-grade barley and hops for beer brewing are cultivated in the low-lying areas. In more elevated regions, the cultivation of potatoes, rye and oats predominates. Higher lands are also used for growing fodder crops or for grazing. In Dec. 1955 there were 4,107,000 cattle, 1,000,000 sheep and (Dec. 1954) 4,771,000 hogs.

The highly developed position of Czech industry is important in foreign trade, since output far exceeds domestic needs. Abundance of coal and presence of iron ore give the country a big metallurgical industry. Steel production was unofficially estimated at 4,900,000 metric tons in 1955; pig iron output, at about 2,976,000 tons. The Skoda steel works at Pilsen are among the largest in Europe.

Other industries are glass, porcelain and pottery making, while large forest areas provide raw material for the timber, paper and cellulose industries. Also highly developed are the textile industries, including cotton, wool, flax and jute production, and the shoe industry. The famous Bat'a shoe factories are at Zlín.

Foreign trade is a state monopoly managed by government corporations. In 1954 total trade (exports and imports) was estimated by the U. N. Commission for Europe at \$1,940,000,000, including \$1,450,000,000 with countries of the Communist group. Leading exports were iron and steel manufactures, machinery, textiles, glass and vehicles.

Czech railroads, totaling 8,200 miles in 1948, form a direct connection between the systems of eastern and western Europe, making the country an important communications center. Highway mileage totaled 43,718 in 1955. Internal waterways and rivers connect Czechoslovakia with the Black Sea and the North Sea.

National budget estimates in recent years (in billions of koruny):

	1954	1955	1956
Revenue	87.8	86.2	90.3
Expenditure	87.6	86.0	89.0

NATURAL FEATURES AND RESOURCES. **CLIMATE.** Czechoslovakia lies athwart the great central European watershed between the Baltic, Black and North Seas. Mountains form several of its boundaries. Many of the valleys are made fertile by the Danube, Elbe and Vltava (Moldau) rivers and their tributaries.

Most important of Czechoslovakia's varied minerals are pit coal and lignite, with the principal coal fields in the Ostrava-Karvinná area, connected with the Polish

fields of Upper Silesia. Production for the year 1955 was estimated at 22,100,000 metric tons of hard coal and 40,700,000 tons of lignite.

Production of iron ore in 1955 was about 2,500,000 tons; much ore is imported to meet the demands of Czechoslovakia's flourishing iron and steel industry. Excellent porcelain raw materials, particularly kaolin, are obtained in western Bohemia and southern Moravia. Other minerals are antimony, gold, magnesite, oil, uranium, silver and zinc.

Czechoslovakia is one-third wooded and is one of the richest forest lands in Europe, with a high production of lumber.

At Prague, in Bohemia, the average annual temperature is 43.2° (29.6° in January; 66.2° in July) and the average annual rainfall is 19.6 inches. The corresponding figures for Presov, in eastern Slovakia, are 46.8° and 25.6 inches.

Denmark (Kingdom)

(Kongeriget Danmark)

Area: 16,577 square miles.

Population (est. Jan. 1, 1957): 4,475,000 (almost entirely Danish).

Density per square mile: 270.0.

Sovereign: King Frederick IX.

Prime Minister: H. C. Hansen.

Principal cities (est. 1957): Copenhagen, including suburbs, 950,700 (capital); Aarhus, 118,700 (shipbuilding); Odense, 107,400 (meat, dairy products); Alborg, 84,200 (seaport).

Monetary unit: Krone.

Language: Danish.

Religion: Evangelical Lutheran (state).

HISTORY. A tiny nation, Denmark once was powerful and feared. After conversion of the Danes to Christianity in the 9th and 10th centuries, Canute the Great, King of Denmark, conquered England in 1015. In the 12th and 13th centuries, under Kings Valdemar I and II, Denmark reached the zenith of its power. By the terms of the Union of Kalmar in 1397, the nation was united with Norway and Sweden. Sweden left the Union in 1520, but Denmark and Norway remained united until 1814. In the Napoleonic Wars Denmark picked the wrong side; when Napoleon was defeated, Norway was given to Sweden and Helgoland to Britain in 1814. Denmark lost again in 1864 when, after a war with Austria and Prussia, it lost Holstein, Schleswig and Lauenburg to Prussia.

The country, which had become a liberal constitutional monarchy in 1849, stayed neutral in World War I, after which a plebiscite returned to it a part of North Schleswig. In 1917 Denmark sold the Virgin Islands to the United States for the price of \$25,000,000.

On May 31, 1939, eager for peace, Den-

mark signed a 10-year nonaggression pact with Germany. Less than a year later, on April 9, 1940, Germany invaded neutral Denmark. The British countered by occupying the Faeroe Islands and Iceland. Iceland declared its complete independence from Denmark in 1944, thus breaking a union which had existed since 1380.

To save the country from destruction, King Christian X accepted the German occupation without armed resistance, and the Danish policy became one of passive resistance against Hitler's attempts to form a "model protectorate." During 1944-45, the Danish underground became increasingly active and effective.

Following the German surrender in 1945, the Danes quickly took over their government again with Social Democrat Vilhelm Buhl as Prime Minister. Buhl resigned when his party lost ground in the national elections of Oct. 30, 1945, and Knud Kristensen formed a new all-Liberal Cabinet in Nov. 1945. He lost the confidence of the Folketing in Oct. 1947, and, after elections in which the Social Democrats increased their plurality, Hans Hedtoft was named Prime Minister on Nov. 11, 1947. His party won the largest block of seats in the September 1950 elections but was forced to yield the next month to a Liberal-Conservative Cabinet headed by Erik Eriksen, a Liberal. Hedtoft returned to office in Sept. 1953 with an all-Social Democrat Cabinet. Upon his death in Jan. 1955, H. C. Hansen became Prime Minister.

RULER. Frederick IX, of the house of Schleswig-Holstein-Sonderburg-Glücksburg, born March 11, 1899, became King April 20, 1947. In 1935 he married Princess Ingrid of Sweden, by whom he has three daughters: Margrethe (heirless apparent, born April 16, 1940), Benedikte (born 1944), Anne-Marie (b. 1946). The King's uncle is King Haakon VII of Norway.

GOVERNMENT AND DEFENSE. Under the Constitution of 1953, Denmark is a hereditary monarchy. Legislative power rests jointly with the King and the unicameral Folketing of 179 popularly-elected members, two of whom represent the Faeroes and two Greenland. The Folketing is elected for four years but is subject to earlier dissolution by the King. The Constitution authorizes the transfer of some sovereign powers to international organizations under certain circumstances. The Cabinet, presided over by the King, who designates the Prime Minister, is the highest executive power.

The lineup in the Folketing (elections of Sept. 22, 1953), was Social Democrat 74, Agrarian Liberal 42, Conservative 30, Radical Liberal 14, Communist 8, others 11.

Military service is compulsory. The army, numbering about 12,000, has been re-

The mountain slopes yield such forest products as balsa, cedar, dyewood, mahogany and rosewood.

The weather is cool and refreshing in the Costa Rican highlands, with average temperatures of 68°, and San José is increasing in importance as a tourist resort. Along the coasts, the mean annual temperature is about 82°. The rainy season is usually from April or May to about December; rainfall amounts to 70 inches yearly on the Pacific coast and more than 130 on the Atlantic or Caribbean.

Cuba (Republic)

(República de Cuba)

Area: 44,217 square miles.

Population (census 1953): 5,829,029 (white, 72.8%; mulatto, 14.5%; Negro, 12.4%; Asiatic, .3%).

Density per square mile: 131.8.

President: Fulgencio Batista y Zaldívar.

Principal cities (census 1953): Havana, 785,455 (capital, industrial center); Mariño, 219,278 (Havana suburb); Santiago de Cuba, 163,237 (seaport, mining); Camagüey, 110,388 (cattle, sugar); Santa Clara, 77,398 (tobacco).

Monetary unit: Peso.

Language: Spanish.

Religion: Roman Catholic.

HISTORY. The history of Cuba, largest of the many Caribbean islands, began for white men with discovery by Columbus on his first voyage in 1492. It was a Spanish colony until 1898, except for brief British occupancy in 1762-63. Open war raged between Cuban rebels and Spanish troops from 1867 to 1878. Fighting broke out again in 1895, and when the United States threatened to intervene, Spain felt its national dignity had been wounded. Strained relations between Spain and the U. S. led to war when the U. S. battleship *Maine* was blown up in Havana harbor in Feb. 1898. At the end of the brief Spanish-American War, Spain gave up Cuba.

Until creation of the Cuban republic in 1902, the island was ruled by United States military authorities. For the first thirty-two years of the republic's life, the United States held the right to intervene in any crisis—a right which was invoked during insurrections which occurred in 1906, 1912 and 1917.

Corruption bedeviled Cuba after World War I, particularly during the eight-year presidency of Gerardo Machado, who was ousted in a 1933 revolution. Five different Presidents tried to rule in the next few months; out of this political whirligig came the dictatorship of Fulgencio Batista, who climbed almost overnight from army sergeant to army commander in chief. In 1940 Batista legalized his reign by being elected to a four-year presidential term.

He was succeeded in 1944 by Dr. Ramón Grau San Martín. Carlos Prío Socarrás won the June 1948 elections and took office Oct. 10 for a 4-year term. Prío was ousted March 10, 1952, however, by Batista, the former dictator, who became provisional President on April 4. He was elected for a 4-year term Nov. 1, 1954.

GOVERNMENT. Cuba's President is elected for a 4-year term by direct popular vote, in which women take part. The Cabinet, though named by the President, is responsible to the Congress—a 54-member Senate and a 130-member House, both elected for four years. Much Cuban lawmaking is done through presidential decree, reviewable by the Supreme Court. Cuban politics are dominated by personalities, with the result that there are frequent shifts in political grouping.

Compulsory military service was established in 1942. The army numbers about 15,000; the navy, 5,000, manning some twenty small coastal craft. The air force has 50 combat planes, two U. S. air bases and one naval base built in World War II at a cost of more than \$30,000,000 were turned over to Cuba in 1946. However, the United States retained its long-held naval base at Guantánamo.

SOCIAL AND ECONOMIC CONDITIONS. Education is free and compulsory from 7 to 14. In 1952-53 public primary schools had 634,924 pupils; private, 98,724. Literacy is estimated at more than 75 per cent. The University of Havana, founded in 1721, had 18,379 students in 1952-53; Oriente University (Santiago), 1,256; Santa Clara, 767; Catholic University of Villanova (Havana), 523.

Half of the employed are engaged in agriculture, which normally accounts for more than 90 per cent of the exports. Often jolted by fluctuations in the price of sugar, of which it produced 6,250,000 short tons in 1957, Cuba has been seeking to vary its agricultural production. About two-thirds of the cultivated area is devoted to sugar cane. Other important crops are tobacco (1956 output: 47,750 short tons), coffee, cacao, fruits, vegetables, henequen, corn, pineapples and rice. The livestock and dairy industry has progressed.

Manufactured products include sugar, molasses, syrup, brandy, rum, alcohol, cigars, cigarettes, cigar boxes, sponges, cement, cordage, salt, dressed hides, dairy products and canned goods. The leading industry is the processing of sugar cane and its products.

Foreign trade (In millions of pesos):

	1954	1955	1956*
Exports	539.0	594.2	666.2
Imports	487.9	575.1	649.0

* Provisional.

Leading exports in 1956 were sugar (74%), tobacco and products (6%) and molasses (5%). Leading customers were the U. S. (65%), Japan (6%) and Britain (4%); leading suppliers, the U. S. (75%), Netherlands Antilles (3%), western Germany (3%) and Britain (3%).

Railroads (1956) included 3,677 miles of public track (mainline track: 3,019 miles) and 7,579 miles of industrial track, mostly on sugar estates. All-weather roads totaled 5,083 miles; other roads, 3,208 miles. The principal domestic air line is Cuban National Aviation Company, a Pan American subsidiary.

The budget for the fiscal year 1956-57 balanced revenue and expenditure at \$330,149,470. The consolidated public debt totaled \$612,874,863 on June 30, 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. Long, narrow Cuba has maximum dimensions of 730 by 160 miles, and is approximately the same size as Pennsylvania. It has mountainous areas in the southeast, central area and west, but the rest is flat or rolling. The coastline, measuring more than 2,100 miles, is indented by many large bays. Cuba's numerous short rivers are of slight importance commercially.

Rich mineral beds, mostly in the eastern province of Oriente, include iron, copper, manganese, chromium and nickel. Iron ore reserves are 90 per cent held by U. S. steel interests. Virtually all mineral exports go to the United States; in 1956 they included nickel, 18,409 metric tons; copper ore, 61,563 tons; manganese ore, 243,861 tons.

Cuba has an estimated 5,000,000 acres of wooded lands, but once plentiful hardwoods such as cedar and mahogany have become scarce and must be supplemented by imports.

The tempering influence of the trade winds on the island's tropical climate makes Havana's average temperature 77° with a range of only 10° (71° to 81°). The dry season lasts from November to April, and the warmer wet season occurs thereafter. Mean annual rainfall at Havana is about 50 inches.

trava (Moravska Ostrava), 183,794 (iron and steel products); (1947): Bratislava, 172,664 (Danube port); Plsen (Plzeň), 118,152 (Skoda steel works).

Monetary unit: Koruna.

Languages: Czech (67%), Slovak (25%), German (4%), Hungarian, Ukrainian, Polish.

Religions (est. 1947): Roman Catholic, 77%; Czechoslovak Church, 8%; Protestant, 7%; Greek Orthodox, .5%; Jewish, .5%; others and no confession, 7%.

HISTORY. Few nations have had a more tragic history than Czechoslovakia, which twice won and lost its independence within 30 years. Born out of World War I, the young republic was an early victim of Nazi aggression in 1938-39. At its rebirth in 1945 following World War II, it enjoyed a measure of its traditional democracy under the shadow of Soviet control. During the next three years Czechoslovakia made by far the greatest economic progress of all the Soviet satellites, but the government was subjected to increasing Communist pressure, climaxed in the spring of 1948 by the Communists' seizure of control and the resignation of President Beneš.

It was probably about the 5th century A.D. that the ancestors of the Czechs and Slovaks settled in the region of modern Czechoslovakia. Slovakia passed under Magyar domination, but the Czechs founded the kingdom of Bohemia, which was among the most powerful in Europe for centuries. German encroachment began in the 12th century and was furthered by the election in 1526 of a Hapsburg as Bohemian King. After the Czechs rebelled in 1618 and were defeated at the Battle of White Mountain in 1620, they were ruled for the next 300 years by the Hapsburgs as part of the Austro-Hungarian Empire. In World War I, Czech and Slovak patriots, notably Thomas G. Masaryk and Milan Stefanik, went abroad to promote support for Czech-Slovak independence, while Czechoslovak legions fought against the Central Powers. On Oct. 28, 1918, Czechoslovakia proclaimed itself a republic; shortly thereafter Masaryk was unanimously elected first President.

Between World Wars I and II, Czechoslovakia supported the League of Nations, formed the Little Entente with Yugoslavia and Rumania, and co-operated closely with France. President Masaryk was succeeded by Dr. Eduard Beneš in 1935.

Meanwhile, the German plan of aggression was under way. Czechoslovakia's German minority, led by Konrad Henlein, began demanding autonomy.

At the Munich conference on Sept. 30, 1938, France and Britain agreed that the Nazis could take the Czech Sudetenland on the German border. Dr. Beneš resigned on October 5, and Czechoslovakia became a federal union in the German orbit. The Poles, in the meantime, had seized Czech-

Czechoslovakia (Republic)

(Československá Republika)

Area: 49,354 square miles.

Population (est. 1956): 13,224,000 (1949: Czech, 67.0%; Slovak, 23.7% German, 3.2%; Magyar, 3.2%; Polish, Jewish and others, 2.9%).

Density per square mile: 267.9.

President: Antonin Zápotocký.

Premier: Viliam Široký.

Principal cities (est. 1948): Prague (Praha), 932,024 (capital, industrial center); Brunn (Brno), 277,196 (textiles); Os-

equipped with British assistance. The navy has 12 frigates and escort vessels, 3 submarines and several patrol vessels and smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Under the Danish system, schooling is compulsory from 7 to 14 and, for the most part, free. The famous popular high schools (*folkehøjskoler*) for adults number 57, all private but assisted by the state. The Royal University of Copenhagen, founded in 1479, has about 4,600 students and that of Århus about 1,750. Elementary, middle and secondary schools had 610,335 students in 1954. Illiteracy is practically unknown.

Social legislation is well advanced and provides for health insurance, disability and old-age pensions, workmen's compensation and social assistance, including poor relief and child welfare. The co-operative movement is also well organized.

Approximately ninety per cent of the land is productive and about three-quarters is actually farmed. Agrarian reform laws have operated to bring about a large number of small holdings. About two-fifths of the cultivated area is devoted to cereals. Root crops (fodder), potatoes and sugar beets also are important. The principal source of exports and of the nation's wealth is dairy farming and the production of meat and dairy products. Recent statistics are as follows (in thousands of metric tons):

	1954	1955	1956
Bacon and pork	524.0	531.8	500.2
Beef and veal	202.0	227.4	237.9
Butter	181.0	164.3	166.2
Cheese	81.0	86.8	84.5
Eggs	142.4	142.4	139.3
Milk	5,394.0	5,124.0	5,063.0

Livestock in July 1956 included 3,167,000 cattle, 4,630,000 hogs, 24,475,000 poultry.

Denmark produces primarily for home consumption, though some industrial products, such as Diesel motors, are large exports. The largest industries are food-processing and iron and metal. Others include chemicals and pharmaceuticals, wood and paper, clothing, textiles, machinery, beverages and leather.

Trade statistics, in millions of kroner:

	1954	1955	1956*
Exports	6,648	7,303	7,677
Imports	8,083	8,139	9,058

* Preliminary.

Leading suppliers in 1955 were Great Britain (26%), western Germany (19%), Sweden (9%) and the U. S. (8%). Chief customers were Great Britain (33%), western Germany (17%), the U. S. (7%) and Sweden (7%). Leading exports were meat and products (27%), dairy products, largely butter and eggs (24%), machinery

(12%) and live meat animals (6%). Leading imports: coal, coke, petroleum and products, machinery, vehicles and textiles.

The Danish merchant marine, one of the largest in the world on a per-capita basis, had 687 ships (100 tons and over) of 1,695,221 gross tons on June 30, 1956, according to *Lloyd's Register*. Regular communications with foreign countries are mainly westward by sea. There are ferry services from Copenhagen to Malmö, Sweden, and from Helsingör (Elsinore) to Hålsingborg.

The main land route to the rest of the continent is the railway via Padborg and Schleswig to Hamburg. Railway mileage totals about 3,050, over half nationalized. Train-ferry services for inter-island communication are highly organized. Motor transport also is well advanced, with about 35,700 miles of roads in 1955.

Recent public-finance data are as follows (in millions of kroner):

	1955-56*	1956-57†	1957-58†
Revenue	4,694	4,752	5,075
Expenditure	4,080	4,372	4,655

* Preliminary. † Budget estimate.

The total state debt on March 31, 1955, was 8,112,000,000 kr.

NATURAL FEATURES AND RESOURCES; CLIMATE. Denmark, only three miles from Sweden at the closest point, consists of the Jutland peninsula and the islands in the Baltic. The largest islands are Zealand, the site of Copenhagen; Fünen; and far to the east, Bornholm. The narrow waters to the north are called Skagerrak; and to the east, Kattegat.

The terrain of the whole kingdom is low but not flat. Its highest point is about 500 feet, and there are many lakes, ponds and short rivers. Sand dunes line the western Jutland coast almost without a break.

Mineral resources are negligible, although some granite and some kaolin are found on the island of Bornholm. Large quantities of coal and coke must be imported. Peat bogs supply an important source of fuel. Forest resources are unimportant.

The fishing industry, centered at Copenhagen but carried on also in the shallow fiords and in the deeper waters of the Baltic, North Sea and Skagerrak, is a basic part of the Danish economy. The 1956 catch of about 422,700 metric tons was valued at 237,100,000 kr.

Denmark's climate is like that of eastern England, but with colder winters and warmer summers. The average annual temperature is 45.2° (61° in July; 32° in January). Average rainfall is 24 inches.

Outlying Territories

FAEROE ISLANDS—Status: Autonomous part of Denmark.

Area: 540 square miles.

Population (est. 1955): 34,000.

Capital: Thorshavn (pop. 1950: 5,607).

Governor general: C. A. Vagn-Hansen.

Principal products: cod, whale oil, cod liver oil, wool, fertilizers, skins and leather.

This group of 21 islands, lying in the North Atlantic about 200 miles northwest of the Shetland Islands, joined Denmark in 1386 and has since been part of the Danish kingdom. The islands were occupied by British troops during World War II, after the German occupation of Denmark. The principal pursuits are fishing and sheep grazing. The Faeroes have home rule under a bill enacted in 1948; they also have two representatives in the Danish Folketing.

GREENLAND—Status: Integral part of Kingdom of Denmark.

Area: 839,782 square miles (almost 85 per cent glacier).

Population (census 1951): 24,159 (native except for 1,269 Europeans).

Capital: Godthaab (second governor's seat, Godhavn).

Governor general: Poul Hugo Lundsteen.

Foreign trade (1955): exports, 49,370,000 kr. (75% to Denmark); imports, 78,256,000 kr. (83% from Denmark). Chief exports: cryolite (41,792 metric tons), fish and products, hides and skins.

Greenland, the world's largest island, was colonized in 985-86 by Eric the Red. Danish sovereignty, which covered only the west coast, was extended over the whole island in 1917. In 1941 the United States signed an agreement with the Danish minister in Washington, placing it under U. S. protection during World War II but maintaining Danish sovereignty. A definitive agreement for the joint defense of Greenland within the framework of NATO was signed on April 27, 1951. A large U. S. air base at Thule in the far north was completed in 1953.

Under 1953 amendments to the Danish Constitution, Greenland is part of Denmark and has two representatives in the Danish Folketing. There is a popularly elected council.

Greenland is the world's only source of natural cryolite, important in the manufacture of aluminum. Large deposits of lead, zinc and wolfram were found on the eastern coast of Greenland after World War II.

Dominican Republic (República Dominicana)

Area: 18,703 square miles.

Population (est. 1956): 2,608,000 (1950: mestizo and mulatto, 60%; white, 28%; Negro, 12%).

Density per square mile: 139.4.

President: Héctor Trujillo y Molina.

Principal cities (census 1950): Ciudad

Trujillo, 181,553 (capital; sugar); Santiago de los Caballeros, 56,558 (tobacco); San Pedro de Macoris, 19,876 (sugar port); Puerto Plata, 14,843 (seaport).

Monetary unit: Dominican peso.

Language: Spanish.

Religion: Roman Catholic.

HISTORY AND GOVERNMENT. The Dominican Republic (formerly San Domingo) occupies the eastern two-thirds of the island which Columbus named La Española (now Hispaniola) when he discovered it on his first voyage in 1492. The other third is occupied by the republic of Haiti. The capital, Ciudad Trujillo, founded in 1496, is the oldest white settlement in the Western Hemisphere.

The Dominican Republic was variously under Spanish, French and Haitian domination until it established its independence in 1865 and then plunged into an unstable political history. U. S. Marines occupied it from 1916 to 1924, when a new Constitution was adopted. In 1930, Rafael Leónidas Trujillo y Molina, an army general, was elected President. In office most of the time during the succeeding 22 years, he brought about improved irrigation, roads, sanitation and schools. His brother, Héctor, was elected unopposed to succeed him in May 1952.

The President is elected every five years by popular vote in which women take part, and he is eligible to be re-elected indefinitely. The 21-member Senate and the 47-member Chamber of Deputies are also elected for 5 years. Each of the 20 provinces has an appointed Governor.

There is a 12,000-man army and a small air force. The navy has 2 destroyers, 9 frigates and escort vessels and other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Education is free and compulsory from 7 to 14. In 1954, there were 2,641 schools with 246,734 students. The University of Santo Domingo had 2,560 enrolled. According to the 1950 census, 56.7% of those 10 years of age and over were illiterate.

Primarily agricultural, the country produces sugar (1955-56: 662,000 metric tons), coffee (610,000 bags of 132 lb. each), cacao (60,000,000 lb.), tobacco, bananas, rice, corn, cassava, beans, sweet potatoes. Cattle raising is of growing importance.

Sugar refining is the only important industry, although several new industries have been established in recent years.

Foreign trade (in millions of pesos):

	1954	1955	1956
Exports	119.7	114.8	124.6
Imports*	82.8	98.1	108.3

* Includes duty-free merchandise.

Leading exports in 1956 were sugar (46%), coffee (26%) and cacao (11%). Chief customers were the U. S. (47%)

and Britain (27%); leading suppliers, the U. S. (66%) and Germany (6%). The main imports are cotton goods, iron and steel products, chemicals and machinery.

Transit facilities include about 170 miles of public railway, more than 600 miles of sugar plantation railway, and more than 3,000 miles of highway.

The 1956 budget estimated revenue at \$122,729,500 and expenditure at \$119,972,890. There is no public debt.

NATURAL FEATURES; CLIMATE. Crossed from northwest to southeast by a mountain range with maximum elevations exceeding 10,000 feet, the country has fertile, well-watered land on the northeast side, where nearly two-thirds of the population lives. The southwest part is arid and with poor soil except around Ciudad Trujillo. The country has many good harbors.

There is little range in temperature, with mean January average of 74°, and August average of 81°. The elevated interior is cooler than the coastlands. Rainfall occurs mainly May to November.

Ecuador (Republic) (República del Ecuador)

Area: 105,743 square miles.

Population (est. 1956): 3,777,000 (1942: mestizo, 41%; Indian, 39%; white, 10%; Negro, 5%; others, 5%).

Density per square mile: 35.7.

President: Camillo Ponce Enriquez.

Principal cities (census 1950): Guayaquil, 258,966 (chief port); Quito, 209,932 (capital); Cuenca, 39,983 (trading center); Ambato, 31,312 (commercial center).

Monetary unit: Sucre.

Languages: Spanish, Quéchua.

Religion: Roman Catholic.

HISTORY. Mostly forested and mountainous and a little larger than Colorado, Ecuador has a long history replete with the forceful rule of dictators. The Spanish under Francisco Pizarro conquered the land in 1532 by defeating the Inca Atahualpa. The first revolt against Spain occurred in 1809, but the victory was not complete until the Battle of Pichincha on May 24, 1822. Ecuador then joined Venezuela and Colombia in a confederacy founded by Simón Bolívar and known as Colombia, but withdrew amicably and became independent in 1830. The country's subsequent history has been largely one of dictatorships, notably under Juan José Flores, Gabriel García Moreno and Eloy Alfaro. Since 1900, administrations have fallen, usually by force, on the average of every two years. Shortly before the 1944 elections, President Carlos Arroyo del Río was forcibly replaced by José Velasco Ibarra, recalled from exile in Colombia. Velasco Ibarra, confirmed in office by the voters later in the year, followed the old

pattern by assuming the role of dictator in 1946 and suppressing opposition.

Velasco was deposed in Aug. 1947, and Carlos Julio Arosemena took over as provisional President until Sept. 1, 1948, when Galo Plaza Lasso, victor in the June 6 elections, took office. Velasco was returned to office in the June 1952 elections. Camillo Ponce Enriquez was elected to succeed him in 1956.

For more than a hundred years, Ecuador disputed its boundary with Peru, frequently resorting to arms. After hostilities started again in 1941, both nations submitted to mediation, and in 1944 Ecuador lost most of the disputed area. The dispute broke out anew in 1951.

GOVERNMENT AND DEFENSE. Under the 1946 (16th) Constitution, Ecuador elects a President for four years by direct vote, and he is ineligible for further service until at least one term intervenes. The Congress is bicameral, with a Senate and Chamber of Deputies. There are 18 provinces, including the Galápagos Islands (3,029 sq. mi.), 650 miles off the coast.

Military service is compulsory at eighteen. The army numbers 10,000 and 40,000 reserves. The navy has 3 frigates, a training ship and several smaller craft. There is an aviation school at Guayaquil and also a naval school at Salinas.

SOCIAL AND ECONOMIC CONDITIONS. Education is free, compulsory and under state control, but illiteracy is very high—43.7% (10 years of age and over) according to the 1950 census. In 1952 there were 3,706 primary schools with 352,396 pupils and 182 secondary schools with 32,390. There are universities at Quito (2), Guayaquil and Cuenca, and a law school at Loja.

Although agriculture is the basis of Ecuador's economy, less than 12,000,000 acres are devoted to it. Cacao, the chief crop (1955-56: 60,000,000 lb.), is grown in coastal regions and lower river valleys, along with rice, sugar cane, coffee, bananas, tobacco and cotton. The plateaus and mountain valleys are used for grazing and dairying, and raising cereals and potatoes. After textiles, one of Ecuador's main industries is the manufacture of Panama hats, made of Toquilla straw.

Foreign trade (in millions of U. S. dollars):

	1954	1955	1956*
Exports†	129.5	122.7	123.8
Imports	102.3	89.7	80.2

* Provisional. † Adjusted for banana undervaluation.

Leading exports in 1956 were bananas (55%), coffee (24%) and cacao (14%). Leading customers were the U. S. (60%); Germany (12%) and Colombia (5%); leading suppliers, the U. S. (52%), Germany (12%) and Belgium (7%).

Railroad mileage in operation is 698, all nationalized. The principal road connects the chief port, Guayaquil, with Quito. Highway mileage in 1955 was about 6,250.

In 1955 ordinary government revenue totaled 730,270,000 sucres; expenditure, 665,735,000 sucres. On Sept. 30, 1956, the foreign debt was \$25,109,000; the internal debt, 493,839,000 sucres.

NATURAL FEATURES AND RESOURCES; CLIMATE. Two high and parallel ranges of the Andes, traversing Ecuador from north to south, are topped by tall volcanic peaks. The region between the mountains and the coast is hot and swampy.

Ecuador produced 18,479 troy oz. of gold and 35,100 oz. of silver in 1954. Copper and lead are also mined. In 1955, 3,534,000 barrels of petroleum were produced. The country is the world's chief source of light, strong balsa wood, and exported 3,918 metric tons in 1955. Exports of rubber reached a high of 3,035 metric tons in 1943; but no exports were reported in 1953-56. Dyewood, cinchona bark, kapok, vegetable ivory are produced.

Though Ecuador, as its name implies, lies on the equator, its climate ranges from tropical and temperate to the Arctic conditions of its snow-capped peaks. Temperatures on the coast average 83°; on the Andean plateau, about 46° to 70°. The rainy season extends from December through April or May.

Egypt (Republic)

(Misr)

Area: 386,100 square miles.

Population (est. 1956): 23,410,000 (1944: Egyptian, 95.4%; Arabian, 1.7%; Greek, .6%; others, 2.3%).

Density per square mile: 60.6.

President: Gamal Abdel Nasser.

Principal cities (est. 1952): Cairo, 2,367,900 (capital); Alexandria, 1,070,000 (chief port); Port Said, 186,300 (Suez Canal terminus); Tanta, 147,800 (railroad center, Nile delta).

Monetary unit: Egyptian pound (£E).

Language: Arabic.

Religions: Moslem, 91%; Christian (mostly Copt and Greek Orthodox), 8%; others, 1%.

HISTORY. Egypt, half again the size of Texas, and the largest and most influential of the Arab states, has been an object of big-power controversy for centuries.

Egyptian history dates back to about 4000 B.C., when the kingdoms of upper and lower Egypt, already highly civilized, were united. Egypt's "Golden Age" coincided with the 18th and 19th dynasties (16th to 13th centuries B.C.), during which the empire was established. Persia conquered Egypt in 525 B.C.; Alexander the Great subdued it in 332 B.C., and then the dynasty of the Ptolemies ruled the land until 30 B.C.,

when Cleopatra, last of the line, committed suicide and Egypt became a Roman province. From 641 to 1517 the Arab Caliphs ruled Egypt, and then the Turks took it and made it part of their Ottoman Empire. Napoleon's armies occupied the country from 1798 to 1801. In 1805, Mohammed Ali, leader of a band of Albanian soldiers, became Pasha of Egypt. After completion of the Suez Canal in 1869, both the French and British took increasing interest in Egypt.

British troops occupied Egypt in 1882, and British resident agents became its actual administrators, though it remained under nominal Turkish sovereignty. On Dec. 18, 1914, this fiction was ended and Egypt became a British protectorate.

Pressure by Egyptian nationalists forced Britain to declare Egypt an independent, sovereign state on Feb. 28, 1922, although the British reserved rights for the protection of the Suez Canal and the defense of Egypt. On Aug. 26, 1936, by an Anglo-Egyptian treaty of alliance, all British troops and officials were to be withdrawn, except from the Suez Canal zone. When World War II started, Egypt remained neutral. British imperial troops finally ended the Nazi threat to Suez in 1942 in the battle of El Alamein, which took place west of Alexandria.

British troops were evacuated from Cairo and Alexandria in 1946, but Anglo-Egyptian negotiations for revision of the 1936 treaty broke down after British refusal to recognize Egyptian sovereignty over the Anglo-Egyptian Sudan.

In Oct. 1951, Egypt abrogated the 1936 treaty and the 1899 agreement on the Sudan. Rioting and attacks on British troops in the Suez Canal zone followed, reaching a climax in Jan. 1952.

The army, led by Gen. Mohammed Naguib, seized power on July 23, 1952. On July 26, King Farouk abdicated in favor of his infant son. Naguib took over the premiership on Sept. 7, 1952, and promised far-reaching reforms. The monarchy was abolished and a republic proclaimed on June 18, 1953, with Naguib holding the posts of both provisional President and Premier. He relinquished the latter post on April 18, 1954, to Gamal Abdel Nasser, leader of the ruling military junta. Naguib was deposed by the Cabinet and junta on Nov. 14, 1954.

Nasser was confirmed as President in a popular referendum held on June 23, 1956. He responded to Russian and satellite overtures to provide Egypt with economic and military aid. Egypt was invaded by separate Israeli and Anglo-French forces in late Oct. and early Nov. 1956; hostilities ceased following UN intervention and foreign troops were ultimately withdrawn.

GOVERNMENT AND DEFENSE. The 1956 Constitution, which was drafted by the military regime and approved by the people in a referendum held on June 23, 1956, provides for a presidential type of republican government. Legislative power is vested in the National Assembly, elected for five years. Executive power is vested in the President, who serves for six years and is nominated by the Assembly and confirmed (or disapproved) by the people in a referendum. He is assisted by a Cabinet of ministers. Political parties are suspended until such time as a law is passed authorizing them. All persons over the age of 18 have the right to vote.

Military service for all Egyptians is compulsory. The Egyptian army, strengthened and modernized during World War II, has about 160,000 men, including police units under military control. The air force has about 150 combat planes, and the navy 4 destroyers, 7 frigates and escort vessels and other smaller craft.

A treaty between Egypt and Britain signed Oct. 19, 1954, required the evacuation of British troops from the Suez canal zone but provided for the maintenance by civilians of defense installations there and gave Britain the right to reoccupy the zone under certain circumstances. The agreement was unilaterally denounced by Egypt effective Jan. 1, 1957.

SOCIAL AND ECONOMIC CONDITIONS. Education is compulsory between the ages of 6 and 12. In 1955-56 there were 7,500 primary schools with 1,860,000 pupils and 600 secondary schools with 435,000 pupils. The University Mosque of el-Azhar in Cairo (founded A.D. 972) is the chief theological seminary of the Moslem world. The University of Cairo (founded 1908), the University of Alexandria (founded 1943) and Ibrahim University (founded 1950) had a total of 60,376 students in 1955-56. Illiteracy is extremely high, being placed at about 74.5% in the latest estimate (1947).

The majority of the people are Sunni Moslems. The Christians are mainly Copts with an admixture of Armenian, Syrian and Maronite sects. The population divides generally into fellahin (peasantry) and townspeople of the same blood, the Bedouin or nomad Arabs of the desert, and the Berbers, who occupy the Nile valley between Aswan and Dongola. The foreigners are chiefly Greeks (whose main center is Alexandria), French, British and Italians. The density of population in the small inhabited area in the Nile valley and delta (about 13,600 sq. mi.) is far greater than that of either the Netherlands or Belgium.

Agriculture is the chief industry, engaging more than half the population. Only about 3.5 per cent (8,600,000 acres)

of the total area is arable, and only about 6,000,000 acres are actually under cultivation, almost entirely in the Nile valley and delta. More than half the cultivated area comprises farms of less than 20 acres. Irrigation is indispensable to agriculture; the Aswan reservoir above the first cataract of the Nile holds up to 5,500,000,000 cubic meters of water and the reservoir of Gebel Aulia, in the Sudan, 2,000,000,000 cubic meters. In the delta and in middle Egypt, where perennial or canal irrigation is possible, two or three crops a year can be grown. The chief cash crop is cotton, of which Egypt is one of the world's leading producers.

Production statistics for 1955 were as follows: wheat, 1,451,000 metric tons; maize, 1,713,000 tons; rice (paddy), 1,268,000 tons; sugar, 300,000 tons; cotton (lint) (1955-56), 334,000 tons.

Other crops include beans, garden crops, dates and grapes. The pastoral industry is relatively unimportant except to the Bedouins in the eastern desert.

Industry includes sugar refining, cotton ginning, cement manufacture, milling and pottery, soap and perfume making. The Sugar Company of Egypt holds a monopoly on the sugar refining industry.

Foreign trade statistics (in millions of Egyptian pounds) are as follows:

	1954	1955	1956*
Exports	138.3	138.4	142.2
Imports	161.3	182.9	186.0

*Provisional.

In 1956, Egypt's chief customers were Czechoslovakia (15%), Japan (7%), western Germany (7%) and the Sudan (6%); leading suppliers, the U. S. (13%), Britain (12%), western Germany (11%) and Italy (6%). Leading exports were raw cotton (70%) and rice (6%).

Imports included wheat, petroleum, fertilizers, iron and steel products, textiles and machinery and vehicles.

Navigable throughout its course in Egypt, the Nile is used largely as a means of cheap transport for heavy goods. The principal port is Alexandria. Railways link Cairo and Alexandria with Suez and nearly every town in the delta. According to *Lloyd's Register*, the merchant marine had 66 ships (100 tons and over) aggregating 128,150 gross tons on June 30, 1956. Cairo has a major airport.

Budget estimates for the fiscal year 1956-57 balanced revenue and expenditure at £E326,270,000. The public debt was £E271,300,000 on June 30, 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. Egypt, at the northeast corner of Africa, is a very rough square, with the historic Nile flowing northward through its eastern third. On either side of the Nile

valley are desert plateaus, spotted with oases. In the north, toward the Mediterranean, plateaus are low, while south of Cairo they rise to a maximum of 1,015 feet above sea level. At the head of the Red Sea, at the northeast corner of Egypt, is the triangular Sinai peninsula, between the Suez Canal and Israel.

The Nile delta starts 100 miles south of the Mediterranean and fans out to a sea front of 155 miles between Alexandria and Port Said. From Cairo north, the Nile branches into many streams, the principal of which are the Damietta and the Rosetta, joined by a network of canals.

The most important minerals are manganese ore, phosphate (1955: 646,700 tons) and petroleum (1956: 11,960,000 barrels). Gold, iron ochres, nickel, sodium carbonate, sulfate talc and tungsten also are mined.

Egypt has no forests. Total value of fishery products was \$18,665,000 in 1953, representing a catch of 93,861 short tons.

Except for a narrow belt on the Mediterranean, Egypt lies in an almost rainless area, in which high daytime temperatures fall quickly at night. The mean temperature at Cairo varies between 53° in January and 84° in July; at Alexandria, between 57° in January and 81° in July. South of Cairo, pure desert conditions prevail; at Aswan the mean maximum temperature is 118°.

SUEZ CANAL. The Suez Canal, in Egyptian territory between the Arabian Desert and the Sinai peninsula, is an artificial waterway about 100 miles long between Port Said on the Mediterranean and Suez on the Red Sea. Construction work, directed by the French engineer Ferdinand de Lesseps, was begun April 25, 1859, and the canal was opened Nov. 17, 1869. The cost was 432,807,882 francs. The concession is held by an Egyptian joint stock company, *Compagnie Universelle du Canal Maritime de Suez*, in which the British government holds 353,504 out of a total of 800,000 shares. The concession was to expire Nov. 17, 1968, but the company was nationalized July 26, 1956, by unilateral action of the Egyptian government. As a result of hostilities the canal was blocked between Nov. 1956 and March 1957.

On the board of management of the canal prior to its seizure were 1 Dutch, 1 American, 5 Egyptian, 16 French and 9 British directors.

SUEZ CANAL STATISTICS

Year	Ships	Net Tonnage	Receipts
1951	11,694	80,356,338	£E26,160,000
1952	12,168	86,137,037	£E26,729,900
1953	12,731	92,905,439	£E28,901,200
1954	13,215	102,493,851	£E30,338,851
1955	14,666	115,756,308	£E32,176,600

In 1955, 28.3% of the tonnage was British, 13.5% Norwegian, 12.1% Liberian, 9.3% French and 8.0% Italian. Over 60% of the goods traffic consisted of crude petroleum and petroleum products.

Estonia

Area: 17,400 square miles.

Population (est. 1956): 1,100,000 (1940: Estonians, 88%; Russians, 9%; Germans [Balts], 1%; others, 2%).

Density per square mile: 63.2.

Principal cities (est. 1938): Tallinn, 146,400 (capital); Tartu, 60,100 (university town); Narva, 24,200 (seaport).

Language: Estonian (Finno-Ugrian).

Religions: Lutheran, 78%; Greek Orthodox, 19%; others, 3%.

Born out of World War I, this small Baltic state enjoyed two short decades of independence before it was absorbed again by its powerful neighbor, Russia. In the thirteenth century, the Estonians had been conquered by the Teutonic Knights of Germany, who reduced them to serfdom. In 1521, the Swedes took over, and the power of the German (Balt) landowning class was curbed somewhat. But after 1721, when Russia succeeded Sweden as the ruling power, the Estonians were subjected to a double bondage—the Balts and the tsarist officials. The oppression lasted until the closing months of World War I, when Estonia finally achieved independence.

Shortly after the start of World War II, the nation was occupied by Russian troops and was incorporated as the 16th republic of the U.S.S.R. in 1940. Germany occupied the nation from 1941 to 1944, when it was retaken by the Russians. Most of the nations of the world, including the U. S. and Great Britain, have not recognized the Soviet incorporation of Estonia.

Ethiopia (Kingdom)

(Abyssinia)

Area: 457,142 square miles.*

Population (est. 1954): 16,000,000* (Abyssinian [Amhara], 20%; Galla, 50%; others, 30%).

Density per square mile: 35.0*

Ruler: Emperor Haile Selassie I.

Prime Minister: Bitwoded Makonnen Endalkatchau.

Principal cities (est. 1951): Addis Ababa, 401,915 (capital); Asmara, 117,000 (capital, Eritrea); Harar, 45,000 (coffee); Dessie, 35,000 (grain center); Dire Dawa, 30,000 (railway workshops).

Monetary unit: Ethiopian paper dollar.

Languages: Amharic, Arabic.

Religions: Copt (Christian), Moslem.

* Including Eritrea.

HISTORY. The historic origins of the Ethiopian state are unknown, but the

royal family traces its origin (about 1,000 B.C.) to the Queen of Sheba and to Menelik, King Solomon's first son. Christianity was introduced about A.D. 330, and after the Arab conquest of northern Africa in the 7th century, Ethiopia was more or less cut off from the outside world for a thousand years. When Theodore III proclaimed himself Emperor in 1853, the country was a conglomeration of autonomous provinces under hereditary chiefs who were usually at war with one another. Menelek II, who ascended the throne in 1889, brought Ethiopia under single rule, and his forces finished off a five-year Italian attempt at invasion with a great massacre at Aduwa on March 1, 1896. Thereafter, Ethiopia moved in the orbit of England and France.

The defeat at Aduwa was not forgotten by Italy, which, after creating fake border incidents, invaded Ethiopia on Oct. 3, 1935, despite the threat of League of Nations sanctions. Addis Ababa fell on May 5, 1936, and Ethiopia was amalgamated with Italian Somaliland and Eritrea into Italian East Africa.

World War II brought early liberation; Ethiopia, in fact, was the first of the Axis-occupied nations to be retaken by the Allies. British and Ethiopian troops reconquered the country in 1941, with the final Italian surrender occurring on Nov. 27. During a transition period thereafter, the nation was under dual Anglo-Ethiopian control. Under an agreement signed on Jan. 31, 1942, British troops quit the country except for stipulated border areas. The latter were evacuated in Aug. 1948.

After the war, the country launched a modernization program in agriculture, industry and education. Irredentist claims to the ex-Italian colonies and former Ethiopian provinces, Eritrea and Somaliland, began to be voiced in 1946. In December 1950, the U. N. General Assembly voted to federate Eritrea with Ethiopia under the sovereignty of the Ethiopian Crown. The federation of the two countries became effective on Sept. 15, 1952.

GOVERNMENT AND DEFENSE. Emperor Haile Selassie I was born July 17, 1891, crowned King on Oct. 7, 1928, and Emperor on Nov. 2, 1930. His eldest son, the Crown Prince and heir apparent, is Asfa Wassan, born on July 27, 1916. The Emperor directly controls the government, though there now is a Council of Ministers, a Senate and a Chamber of Deputies. All members are appointed by the monarch, however.

In wartime, military service is compulsory. The small Ethiopian standing army is equipped and trained by a British military mission. A small Ethiopian force was dispatched to Korea in 1951.

SOCIAL AND ECONOMIC CONDITIONS. The education system is extremely back-

ward. Foreign missions or the government maintain schools in the principal towns, and several secondary schools have been set up. There were 431 state primary schools with 69,000 pupils in 1953-54, 11 secondary with 2,155. Illiteracy is estimated at 70%. The Coptic Church (Christian), with its numerous priests, exercises powerful influence and owns much Ethiopian land. It became independent of the Coptic Archbishop of Alexandria in 1946. Moslems, numerous in frontier regions, have their religious center at Harar.

Ethiopia is generally fertile, predominantly agricultural and pastoral, with many regions yielding two crops a year. The chief crops are maize, wheat, barley, rye, cotton, sugar cane, millet, hemp, vegetables, coffee and teff (the common bread grain). The country's inadequate transport system, however, makes crop growing largely a local industry.

The country grazes several million cattle, and many goats and sheep. Horses and mules are bred extensively as pack animals and mounts. There is little manufacturing except for small native industry, although the Italians built some industrial plants during their five-year occupation.

Recent trade data (for years beginning Dec. 11, in millions of Ethiopian dollars):

	1953-54	1954-55	1955-56
Exports*	160.3	162.2	151.3
Imports	160.1	168.0	156.9

* Excluding specie.

Chief exports in 1954-55 were coffee (56%), hides and skins (10%) and oilseeds (11%). Leading customers were the U. S. (25%), Aden (21%) and Italy (19%); leading suppliers, Italy (15%), India (14%) and the U. S. (13%). Major imports were cotton piece goods, machinery, sugar and salt.

The 486-mile track from Addis Ababa to Djibouti in French Somaliland is Ethiopia's only rail outlet and its principal trade route. Motorable roads, non-existent until about 1925, now total over 9,000 miles.

Government revenue in 1954-55 totaled Eth.\$119,988,000; expenditure, Eth.\$117,745,000.

NATURAL FEATURES AND RESOURCES; CLIMATE. Over its main plateau-land, Ethiopia has several high mountains. Most of the many rivers are rapid, not navigable, and flow into the Nile. The Blue Nile, or Abbai, rises in the northwest and flows in a great semicircle east, south and northwest before entering Sudan. Its chief reservoir, Lake Tana, lies in the northwestern part of the plateau.

Gold, produced from placer mines worked by natives in the south and west, is Ethiopia's main mineral. Platinum also is mined in fair commercial quantities. Other

minerals are rock salt, cinnabar, copper, iron, mercury, mica, potash and sulfur. Oil deposits are believed to exist, and all drilling rights have been sold to the Sinclair Refining Company of the U. S.

Ethiopia, lying wholly within the tropics, escapes a torrid climate because of its elevation, although the lowlands are hot. The mean annual range of temperature is between 60° and 80°, although Alpine conditions prevail in the higher mountains. Addis Ababa has about fifty inches of rain annually.

ERITREA—Status: Federated with Ethiopia.

Area: 47,875 sq. mi.

Population (est. 1955): 1,104,000.

Capital: Asmara (population: 117,000).

Sovereign: Haile Selassie I.

Chief Executive: Fitaaurari Asfaha Wolde-mikael.

Agricultural products: coffee, barley, tobacco, sesame, hides, skins.

Minerals: gold, salt, potassium salts.

Sea product: pearls.

The first Italian inroad into Eritrea came in 1870 when the port of Assab and adjacent territory were bought from a native sultan; with British approval, Italian troops occupied Massaua in 1885. By a decree of Jan. 1, 1890, Italian possessions along the Red Sea were united into the colony of Eritrea. In 1936 Eritrea became a part of Italian East Africa. British and Indian troops captured Asmara on Apr. 1, 1941, and Massaua a week later; the area, reduced to its pre-1936 borders, then came under British military administration. The U. N. General Assembly on Dec. 2, 1950, adopted a plan for federation of an autonomous Eritrea with Ethiopia under the sovereignty of the Ethiopian Crown, federation becoming effective Sept. 15, 1952.

As an autonomous, self-governing area, Eritrea has its own elected assembly which selects the chief executive. It is also represented in the Ethiopian Parliament. Matters reserved to the Ethiopian government include defense, foreign affairs, foreign trade, finance and communications.

The principal native elements are the Ethiopians and Tigrés, who have close ethnic, linguistic and religious ties with peoples in neighboring Ethiopia. Irrigation is essential in the coastal plains, and agriculture is practiced largely on the interior plateau (average elevation: 6,500 ft.).

Along the coast, the climate is excessively hot and humid, and rainfall is less than 8 inches a year.

Finland (Republic)

(Suomen Tasavalta)

Area: 130,119 square miles.

Population (est. Jan. 1, 1957): 4,314,000 (Finnish, 90%; Swedish, 10%).

Density per square mile: 33.2.

President: Urho Kekkonen.

Premier: Veino J. Sukselainen.

Principal cities (est. Jan. 1, 1957): Helsinki, 428,000 (capital); Tampere, 115,700 (textiles, paper); Turku (Abo), 114,400 (seaport, shipbuilding); Lahti, 60,500 (glass, lumber); Oulu, 49,300 (seaport, shipbuilding).

Monetary unit: Markka (FM).

Languages: Finnish, Swedish.

Religions (1949): Evangelical Lutheran, 97%, Greek Orthodox, 2%; others, 1%.

HISTORY. The Finns, a people of possibly Mongolian origin, first settled their Montana-sized area about A.D. 100. King Eric IX of Sweden conquered them about 1155 and introduced Christianity. Under Swedish rule, which lasted for 650 years, the Finns retained considerable autonomy and were given their own parliament in the 17th century.

Political pressure growing out of the Napoleonic Wars forced Sweden in 1809 to cede Finland to Russia, which gave the Finns a Constitution and set them up as a grand duchy. Out of the chaos and complexities of World War I, the Russian revolution of 1917 and a Finnish civil war in 1918 between "Reds" and "Whites" led by Baron Carl G. von Mannerheim, Finland emerged as a republic in 1919. A year later Russia ceded to Finland the Petsamo area with its ice-free Arctic port.

For the next twenty years Finland was generally orderly and prosperous except for vigorous suppression of Communists and a bloodless rightist uprising in 1932. In Nov. 1939, however, Russia attacked Finland to enforce territorial demands. The sturdy Finns stood off large-scale Red Army assaults for 105 days, but finally lost. Under German pressure the Finns joined the Nazis against Russia in 1941—and lost again.

Baron Mannerheim (who had led Finnish forces in both wars with the U.S.S.R.) became President in 1944, and Finland severed relations with Germany on Sept. 2, signed an armistice and concluded a provisional peace treaty with Britain and Russia, Sept. 19. The U. S. had not declared war on Finland.

Pro-Russian Juho K. Paasikivi became Premier on Nov. 11, 1944, and when Mannerheim resigned because of illness on March 4, 1946, Paasikivi was elected to fill the unexpired term. The premiership went to Mauno Pekkala, leader of the new Socialist Unity party, advocating co-operation with the Communists.

The Communists and their allies lost ground in the July 1948 parliamentary election; and on July 29, Karl August Fagerholm formed a Social Democrat government in which the leftist bloc was not represented. Paasikivi was re-elected for a full 6-year term in Feb. 1950, and on Mar.

17, Fagerholm was succeeded as Premier by Urho Kekkonen at the head of a centrist minority Cabinet. He yielded on Nov. 17, 1953, to Sakari S. Tuomioja. After the Mar. 1954 elections, Swedish party leader Ralf Toerngren formed a coalition Cabinet on May 5, 1954, but Kekkonen took over again on Oct. 20, 1954. Kekkonen was elected President on Feb. 15, 1956, and Fagerholm succeeded him as Premier. Following a split in the Social Democratic party, Veino J. Sukselainen of the Agrarian party became Premier May 27, 1957.

GOVERNMENT. Under the 1919 Constitution, the 200 Diet members are popularly elected by a proportional-representation system for three-year terms. The President, normally chosen for six years by an Electoral College of 300 members nominated by the people, acts through his Cabinet headed by the Prime Minister. Suffrage is universal. Because of the many political parties, government usually is carried on by a coalition, with frequent Cabinet changes.

Party standing in the Diet after the elections of March 1954 was as follows (1951 standings are shown in parentheses): Social Democrats, 54 (53); Agrarian, 53 (51); Communists, 43 (45); Conservatives, 24 (26); Swedish People's party, 13 (15); National, 13 (10).

The Swedish-populated Åland islands (581 sq. mi.) have an autonomous status under a law passed in 1951.

PEACE TREATY OF 1947. The final peace treaty became effective Sept. 15, 1947; it confirmed the *de facto* cession to the U.S.S.R. of the Petsamo area, Viipuri and the Karelian region and also of the Porkkala-Udd area west of Helsinki for use as a Soviet naval base. Finland was to pay reparations of \$300,000,000 in kind (reduced to \$225,000,000 by the U.S.S.R. in 1948) over a period of eight years from Sept. 19, 1944. Reparations payments were completed in Sept. 1952. Porkkala was returned to Finland in Jan. 1956.

The treaty limited Finnish defense forces to the following strengths: army, 34,400 personnel; navy, 4,500 personnel and a tonnage of 10,000; and air force, 3,000 personnel and 60 aircraft. The possession of bombers, submarines, atomic weapons and motor torpedo boats is prohibited.

SOCIAL AND ECONOMIC CONDITIONS. Illiteracy is very low (less than 1% beyond the age of 15). Education is compulsory from 7 to 15. In 1954-55 there were 6,481 elementary schools with 564,807 students and 373 secondary schools with 135,348 pupils. There are three regular universities, of which Helsinki has the largest enrollment (8,441 in 1954-55).

Only about 3 per cent of the land is under cultivation, and about 5 per cent in

grassland. The chief crops (with estimated 1956 production in metric tons) are oats, 658,944; barley, 286,354; rye, 123,742; potatoes, 1,693,435. Grazing lands are extensive. In 1956, there were 1,827,070 cattle, 565,738 sheep, 434,584 hogs and 151,701 reindeer.

The leading Finnish manufactures are wood and paper (about one-third the total value), food, luxury items, machinery and textiles. With the cession of the Karelian isthmus and the city of Viipuri to the U.S.S.R., Finland lost valuable manufacturing areas. Helsinki is the principal industrial center.

Trade statistics are as follows (billions of markkas):

	1954	1955	1956
Exports	156.62	181.30	177.99
Imports	152.14	176.96	203.56

Chief exports in 1956 were wood and wood products (32%), paper (25%) and wood pulp (21%). Leading customers were Britain (21%), U.S.S.R. (19%), western Germany (9%) and the U. S. (7%); leading suppliers, Britain (20%), U.S.S.R. (14%), western Germany (12%) and the U. S. (7%).

According to *Lloyd's Register*, the merchant marine on June 30, 1956, had 353 ships (100 tons and over) aggregating 751,818 gross tons. The numerous lakes, many joined by canals, are busy routes used by both ships and timber rafts. There were approximately 39,000 miles of road in 1953. Railway mileage in 1956 totaled 3,217, almost entirely nationalized.

Recent public finance data are as follows (in billions of markkas):

	1955*	1956†	1957†
Revenue	235.4	215.3	250.0
Expenditure	243.0	215.3	250.0

* Preliminary estimate. † Budget estimate.

The total public debt was estimated at 128,000,000,000 FM on Dec. 31, 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. Finland stretches 700 miles from the Gulf of Finland on the south to Soviet Petsamo, north of the Arctic Circle. Off the southwest coast are the Åland Islands (approximately 300), controlling the entrance to the Gulf of Bothnia. Finland has more than 60,000 lakes. Of the few rivers, only the Oulu (Uleå) is navigable to any important extent.

Finland has no coal or oil, and many of its ore deposits are remote from transportation. Finland's sulfide ore (production in 1956: about 1,928,400 metric tons) is 4 per cent copper, 26 per cent sulfur and 27 per cent iron, with some zinc, cobalt, gold and silver. Limestone, soapstone and red granite deposits are extensive, and uranium deposits are believed to exist. Wood and peat are the only natural fuels.

More than a third of Finland is covered with high quality timber, the nation's richest natural resource. Timber production in 1956 was about 810,000 standards; cellulose, 1,859,100 metric tons; mechanical pulp, 185,100 tons; paper, 102,200 tons; cardboard, 293,300 tons.

Finnns have fished for centuries, not commercially, but for domestic consumption. The 1956 catch was about 60,200 metric tons valued at 4,800,000,000 FM.

Finland's long severe winters are moderated somewhat along the coast by prevailing southwest winds, but the summer lasts only about two and a half months of the year. Southerly Finnish ports are icebound part of the year. Rainfall is light, with the driest months from May to September.

France (Republic)

(République Française)

Area: 212,736 square miles.

Population (est. Jan. 1957): 43,787,000 (1954: French, 96.6%; others, 3.4%).

Density per square mile: 205.8.

President: René Coty.

Premier: Maurice Bourgès-Maunoury.

Principal cities (census 1954): Paris, 2,850,189 (capital); Marseilles, 661,492 (chief port); Lyons, 471,270 (silk, metal manufacture); Toulouse, 268,863 (tobacco; commercial center); Bordeaux, 257,946 (wine; seaport); Nice, 244,360 (resort center); Nantes, 222,790 (manufacturing).

Monetary unit: Franc.

Religion (est.): Roman Catholic, 97.5%; Protestant and others, 2.5%.

HISTORY. France was ancient Gaul when Caesar conquered a part of it in 57-52 B.C.; for several centuries thereafter it was bound to the Roman Empire. In the 5th century A.D., it was overrun by the Franks and other barbarian tribes. Between 768 and 814, Charlemagne created a Frankish empire covering most of Western Europe, but by the time Hugh Capet came to the throne in 987, his kingdom comprised only the region around Paris. For more than 300 years the Capets struggled to unify the many feudal fiefs.

Philip VI, cousin of the last Capet and first of the House of Valois, took the throne in 1328. Soon thereafter began the Hundred Years' War (1338-1453), the struggle over England's bid to seize the French Crown. The English won at Crécy in 1346 and at Agincourt in 1415, but were defeated at Orléans in 1429 by the French forces led by Joan of Arc. Cruel persecution of French Protestants, the Huguenots, was followed by civil war and then the Edict of Nantes in 1598, by which the Huguenots received complete religious freedom from Henry IV, first of the Bour-

Splendor, wealth and the establishment

of a colonial empire marked the long reign of Louis XIV from 1643 to 1715. Extravagance, however, forced Louis XVI to struggle with the problem of taxation at a time when the forces of revolution were coming to a head among France's lower and intellectual classes. The French Revolution, of world significance for its impact on absolute rule, broke out in 1789. Louis XVI was deposed in 1792 and executed the next year. Then came the Reign of Terror as the revolution swung to excess, the Directory from 1795 to 1799, and the Consulate from 1799 to 1804, after which Napoleon was proclaimed Emperor. Meanwhile, French armies were engaged on all sides, spreading French hegemony over most of western and central Europe. The final downfall came at Waterloo on June 18, 1815.

The restored Bourbon, Louis XVIII, reigned until 1824 and was succeeded by his reactionary brother, Charles X, who was overthrown in the revolution of 1830. His successor, Louis Philippe, was unseated in 1848, and succeeded by Napoleon's nephew, Louis. Inaugurated President of the Second Republic in 1848, Louis Napoleon became Emperor as Napoleon III in 1852 but abdicated after France's defeat in the Franco-Prussian War of 1870-71. The resultant conflict between republicans and monarchists was resolved by the adoption of a republican Constitution in 1875, which established the Third Republic to replace the provisional republic set up in 1871.

Victorious with the Allies in World War I under Premier Georges Clemenceau, France emerged as the dominant power on the continent. From 1919 on, its aim was to keep Germany weak through a system of military alliances and by maintaining a strong French army.

The effort was a dismal failure. At home France was weakened by economic and political instability, with many short-lived Cabinets. Germany became a dictatorship, with the full national energy bent toward war. The Third French Republic, permitting political freedom, bickered and argued away its years. The leftist "Popular Front" coalition Cabinets of Léon Blum (1936-47) and Camille Chautemps (1937-38) were succeeded by the Radical and Radical-Socialist Cabinet under Édouard Daladier, one of the men of Munich.

Paul Reynaud took Daladier's place on March 21, 1940, less than seven months after the start of World War II. In May 1940, Hitler's armies finally poured into France; and on June 16, the reins of government fell to Marshal Henri Philippe Pétain, who opposed continuation of the war. An armistice with Germany was signed June 22, dividing France into occupied and unoccupied zones. The Third Republic was voted out of existence on July 10 by

FRANCE AND THE FRENCH UNION

Political subdivision	Area (sq. ml.)	Population	Political subdivision	Area (sq. ml.)	Population
France	212,736	43,787,000 ⁷	Sénégal	80,617	2,198,000 ⁵
Africa			Madagascar and dependencies	230,165	4,740,000 ⁵
Algeria	846,124	9,531,000 ⁴	Réunion	969	274,370 ⁴
Cameroun	166,793	3,116,000 ⁴	Togo	21,135	1,070,000 ⁵
Comoro archipelago	832	170,046 ⁴	Western Hemisphere		
French Equatorial			French Guiana	35,135	27,863 ⁴
Africa	969,111	4,537,000 ⁵	Guadeloupe	687	229,120 ⁴
Chad	495,752	2,384,000 ⁵	Martinique	425	239,130 ⁴
Gabon	103,089	392,000 ⁵	St. Pierre and Miquelon	93	4,606 ¹
Middle Congo	132,046	698,000 ⁵	Asia		
Ubangi-Shari	238,224	1,063,000 ⁵	Laos	91,500	1,425,000 ⁵
French Somaliland	8,494	64,000 ⁵	Oceania		
French West Africa	1,831,079	17,676,000 ⁵	French Pacific Settle- ments	1,545	63,000 ³
Dahomey	43,784	1,565,000 ⁵	New Caledonia and dependencies	7,654	63,000 ³
French Guinea	106,216	2,261,000 ⁵	New Hebrides	5,700	53,000 ⁵
French Sudan	460,540	3,467,000 ⁵			
Haute Volta	105,946	3,137,000 ⁵			
Ivory Coast	123,282	2,390,000 ⁵			
Mauritania	416,061	567,000 ⁵			
Niger	494,633	2,181,000 ⁵			

(Note: Each population figure is followed by a superior number denoting the year of estimate or census: ⁷for 1957, ⁶for 1956, ⁵for 1955, ⁴for 1954, etc.)

the National Assembly at Vichy, and Unoccupied (Vichy) France became totalitarian, with Pétain as Chief of State.

Meanwhile, in London, General Charles de Gaulle had formed on June 18, 1940, a provisional French National Committee, which received British recognition and represented the interests of free Frenchmen. De Gaulle's government-in-exile was moved to Algiers in June 1943 as the French Committee for National Liberation.

After the liberation of Paris, De Gaulle formed a provisional government in the capital on Sept. 10, 1944. It remained in power as a theoretically nonpolitical regime until the elections of Oct. 21, 1945, when a National Assembly was selected to draw up a new Constitution and serve as an interim legislative body. De Gaulle was named provisional President on Nov. 13 but resigned soon after and was succeeded by Félix Gouin, a Socialist, Jan. 23, 1946.

A new Constitution was approved by a slim margin Oct. 13, and the Fourth Republic formally took shape early in 1947 with the election of Socialist Vincent Auriol as President, Jan. 16, and the confirmation of Socialist Paul Ramadier as Premier, Jan. 22.

The ensuing years were marked by a parade of short-lived multiparty Cabinets reflecting the basic French political instability. In the 1951 National Assembly elections, De Gaulle's supporters emerged as the strongest single party; its gains were largely at the expense of the centrist coalition, which had furnished most of the Cabinets since 1946. René Coty was elected

President of the republic on Dec. 17, 1953, to succeed Vincent Auriol.

Edgar Faure, who formed France's 21st post-liberation Cabinet on Feb. 23, 1955, used a rarely-invoked procedure to force dissolution of the Assembly on Nov. 30, 1955. In new elections held Jan. 2, 1956, leftist and rightist extremists scored important victories. Socialist Guy Mollet formed a left-of-center coalition Cabinet on Feb. 1. He was replaced June 17, 1957, by Radical Socialist Maurice Bourgès-Maunoury.

France's economy deteriorated steadily in 1957 despite increases in taxation, reduction in government spending, new import quotas and other measures to halt increasing deficits in foreign exchange. Finally, on Aug. 10, the franc was revalued officially for foreign tourists and traders at 424 to the dollar instead of 350. The government also imposed a 20% subsidy on exports and a 20% tax on most imports.

GOVERNMENT AND DEFENSE. Under the Constitution of 1946, France is a secular, democratic and social republic. The dominant power in the new republic is the National Assembly, whose 627 members are elected for 5 years by universal direct suffrage. There is also a Council of the Republic of 320 members elected by a complicated indirect procedure requiring 8 different elections. This house has only advisory and delaying powers and is definitely subordinate to the Assembly. The two houses together elect the President of the republic for a 7-year term, but his choice of a Premier and the latter's choice of Cabinet ministers require Assem-

bly ratification. All ministers are collectively responsible to the Assembly for the general policy of the Cabinet and are individually responsible for their personal actions. Communists have been excluded from the government since April 30, 1947.

The Assembly elections of Jan. 2, 1956, divided the 627 seats as follows: Communists and affiliates 150; Conservatives (*Paysans*) and affiliates 95; Socialists 94; Popular Republicans 73; Radical Socialists and affiliates 57; French Brotherhood (*Poujadists*) and affiliates 52; Gaullists and affiliates 21; others 53; vacancies and elections pending 32. Several of the *Poujadists* were subsequently disqualified.

GOVERNMENT OF OVERSEAS TERRITORIES. The French Constitution of 1946 provided for establishment of the French Union, consisting of the French Republic (metropolitan France and the overseas departments, territories and trusteeships) and the associated territories and states. The overseas departments are Algeria (four departments), Martinique, Guadeloupe, French Guiana and Réunion.

The overseas departments and territories are represented in the National Assembly by 75 deputies and in the Council of the Republic by 65. In addition the Constitution provided for creation of a High Council, consisting of nominees of the French government and of the associated states, and an Assembly of the French Union, with power that is mainly advisory. The Assembly, which met for the first time on Dec. 10, 1947, consists of 240 delegates, 120 of whom are elected by the French Parliament, 75 by territorial assemblies overseas, and 45 by the associated states.

A *loi-cadre* of June 26, 1956, provided legislation for greater self-government in the overseas territories concerned and empowered the French government to initiate detailed reforms by decree. A series of 13 decrees implementing the law were approved by the French parliament in March 1957.

Defense. French armed forces were believed to total about 700,000 personnel in mid-1957, including the gendarmerie. In Dec. 1956, the navy had 3 light aircraft carriers, 1 escort carrier, 2 battleships, 5 cruisers, 25 destroyers, 57 frigates and escort vessels, 14 submarines and several hundred smaller craft.

SOCIAL AND ECONOMIC CONDITIONS.

Education. State elementary schools in 1953-54 numbered 70,166 with 4,085,738 students. There were also 10,691 private schools with 888,021 students. Students attending higher elementary schools, state and private, totaled 299,069. Pupils attending state secondary schools totaled 529,879; private, 372,974

Higher education is provided chiefly in the universities, of which there are 17, with total enrollment of 155,803 in 1955. The University of Paris is largest, with an enrollment of 62,395 in 1954.

Religion. The predominant faith is Roman Catholicism, but Church and State were separated in 1905. Diplomatic relations with the Vatican were resumed in 1921, and lesser church property was returned to diocesan associations in 1924.

Population. The people are not homogeneous, varying from section to section. During the inter-bellum period, the population remained almost static, with an increase of only 72,133 from 1931 to 1936 and a decrease of 3.3 per cent from 1936 to 1946. The period between 1946 and 1954 showed an increase of 5.6 per cent. The French birth rate also fell sharply (1925: 19.6; 1936-38 annual average: 14.8), but the end of World War II saw an uptrend, and the rate was estimated at 18.3 in 1956.

Agriculture. The national economy of France is predominantly agricultural. Of the total area, approximately 40 per cent is ordinarily devoted to crops, 20 per cent to forests, 3 per cent to vines and two per cent to market and other gardening. The vast majority of holdings are small farms worked by the owners. France normally is almost self-sufficient in basic foodstuffs and leads the world in wine production.

Recent production estimates for major crops (thousands of metric tons):

	1954	1955	1956
Wheat	10,566	10,365	5,695
Rye	514	440	476
Barley	2,525	2,671	6,700
Oats	3,574	3,640	3,761
Potatoes	16,986	15,088	18,330
Sugar beets	10,973	9,805	10,200

Other important crops are berries, fodder beets, fruits, hay, nuts and turnips. Silk culture once thrived in the lower Rhône valley, but production fell sharply between wars. Milk, butter and cheese are important as exports. Livestock in Oct. 1956 included 17,792,000 cattle, 8,355,000 sheep and 7,728,000 hogs. Wine production in 1956 was estimated at 1,400,000,000 U. S. gallons (preliminary).

FRENCH INDUSTRIAL PRODUCTION

Monthly averages in metric tons

Product	1955	1956
Pig iron and ferroalloys	924,000	970,000
Crude steel	1,049,000	1,117,000
Cement	897,000	949,000
Cotton yarn	22,100	23,400
Wool yarn	10,700	11,800
Rayon yarn	4,570	4,460
Electricity	3,894*	4,229*
Manufactured gas	208†	217†
Automobiles	46,110‡	54,040‡

* Millions of kwh. † Millions of cu. m. ‡ Units.

Industry. Principal industrial areas are Paris, Artois, Lower Seine and Lyon; the textile industry is concentrated in the north. Leading manufactures are iron, steel, chemicals, textiles, automobiles, machinery and beet sugar. Industrial production in 1956 was estimated at 133% of the 1953 level.

Trade. Foreign trade statistics, in billions of francs, including the Saar:

	1954	1955	1956
Exports	1,466	1,736	1,623
Imports	1,475	1,674	1,976

Principal suppliers in 1956 were the U. S. (12%), western Germany (10%), Algeria (7%), Britain (5%) and Belgium (5%); leading customers, Algeria (13%), western Germany (10%), Belgium (8%), Switzerland (7%) and Britain (6%). Leading exports were metals and manufactures, textiles and agricultural and food products.

Communications. The French merchant marine had 1,201 ships (100 tons and over) aggregating 3,943,201 gross tons on June 30, 1956, according to *Lloyd's Register*—eighth largest in the world on that date.

There are about 5,500 miles of navigable waterways, including canals, with a traffic of 42,075,000 metric tons in 1953. There are approximately 550 inland navigation ports, of which Paris, Rouen and Strasbourg each normally handle more than one million tons annually (Paris, more than ten million tons). Railway mileage in 1954 totaled 25,600. Railroads were merged in 1938 into the *Société Nationale des Chemins de Fer Français*, of which the government acquired controlling interest. Highway mileage in 1953 was 515,000, including 50,000 miles of national highways. Telephones totaled 3,116,697 on Jan. 1, 1956. Air France, nationalized on Jan. 1, 1946, operates on a world-wide basis.

	1955	1956*	1957*
Revenue	3,553	3,373	3,713
Expenditure	3,956	3,959	4,900

* Budget estimate.

NATURAL FEATURES AND RESOURCES;

CLIMATE. With a maximum length of about 600 miles and a width of 550 miles, France is second in size to Russia among Europe's nations. Its coastline is about 1,950 miles. In the Alps near the Italian and Swiss borders is France's highest point—Mont Blanc, 15,781 feet. The forest-covered Vosges Mountains are in the northeast and the Pyrenees are along the Spanish border. Except for extreme northern France, which is part of the Flanders plain, the country may be described as four river basins and a plateau. Three of the streams flow west—the Seine into the English Channel, the Loire into the Atlantic, and the Garonne into the Bay of Biscay.

The Rhône flows south into the Mediterranean. For about a hundred miles, the Rhine is France's eastern border. West of the Rhône and northeast of the Garonne lies the Central Plateau, covering about 15 per cent of France's area, and rising to a maximum elevation of 6,188 feet. In the Mediterranean, 115 miles east-southeast of Nice, is Corsica, the island of Napoleon's birth, with an area of 3,367 square miles.

Minerals. French coalfields, most extensive in the northeast, ordinarily supply about 70 per cent of domestic needs. Lorraine, Anjou and Normandy have valuable iron ore deposits. Provence has bauxite. Alsace has potash and oil. Limousin has kaolin, zinc, lead and tar.

Production in 1956 (excluding the Saar) included coal, 55,128,000 metric tons; iron ore (metal content 35%), 52,680,000 tons; lead (smelter), 63,360 tons; petroleum, 8,825,000 barrels; potash (K₂O content), 1,499,996 tons.

Forests and Fisheries. France, with more than 26,000,000 wooded acres, produces well over \$100,000,000 worth of forest products in a normal year, including resin, turpentine, timber and nuts. The annual fish catch (522,700 metric tons in 1955) is among the largest in Europe. Cod and sardines are usually the biggest items.

Climate. France's climate is temperate but varies from long cold winters and hot summers in the northeast, to the subtropical temperature of the Mediterranean coast with very mild winters. With no high western elevations to block moisture-laden winds from the Atlantic, all France has adequate rainfall of 20 to 30 inches a year. The mean annual temperature at Paris is 50.5° (36.5° in January and 65.5° in July). The rainiest months are June and October, with February usually the driest.

Andorra

This 191-square mile autonomous and semi-independent state on the Franco-Spanish border has been under the joint suzerainty of the French State and the Spanish bishops of Urgel since 1278. It is a cluster of mountain valleys inhabited by about 6,500 hardy and traditionally independent people whose principal pursuit is the tending of flocks. Catalán is the language spoken, and both French and Spanish currency are in use. Andorra is governed by a Council General of 24 members, elected for four years by the heads of families. A First Syndic, chosen by the Council, constitutes the supreme executive authority.

FRENCH UNION

AFRICA

Algeria (Part of Metropolitan France)

(L'Algérie)

French Minister: Robert Lacoste.

Principal cities (census 1954): Algiers, 355,040 (capital); Oran, 291,812 (seaport); Constantine, 143,334 (trading center); Bône, 112,010 (seaport, phosphates).

Monetary unit: French franc.

Languages: Arabic, French.

Religions: Moslem (natives), Roman Catholic, Jewish.

HISTORY. Algeria, more than three times the size of Texas and situated on the northern bulge of Africa, was of great strategic importance during World War II. After U. S. and British troops occupied it following the landings of Nov. 8, 1942, it became the headquarters of the provisional French government of General Charles de Gaulle until the summer of 1944. For many months during that period it was the headquarters of the Allied Expeditionary Force.

Algeria became a Roman colony after the fall of Carthage in 146 B.C. and was overrun by the Arabs in the 7th, 11th and 12th centuries. In the 13th century it became one of the three kingdoms founded on the ruins of the old Almohade Empire. Following a brief Spanish occupation, it went under Turkish suzerainty in 1518. For 300 years thereafter, Algiers was the headquarters of the notorious Barbary pirates who preyed on Mediterranean shipping. The French ended Turkish rule by taking Algiers in 1830, but it was not until 1847 that they were able to suppress a holy war instigated in 1839 by Abd-el-Kader.

French policy for a time vacillated between complete assimilation of Algeria as part of France, and a decentralized administration under a Governor General. In 1896 the idea of assimilation was abandoned for a number of years. After France fell in 1940, Algerian government officials were loyal to Vichy, but their control was ended by the Allied invasion of Africa in the fall of 1942.

Outbreaks of anti-French terrorism beginning in 1955 required heavy French troop reinforcements.

GOVERNMENT. In effect, Algeria is part of France. Its 12 departments are represented in the French National Assembly, and it is one of the ten military districts of France, with both French and natives subject to military service. The French Minister is a member of the French Cabinet. A statute enacted in Aug. 1947 gave Algeria an elected Legislative As-

sembly, but leadership of the government still remains with the French Minister.

SOCIAL AND ECONOMIC CONDITIONS. Primary and secondary schools for Europeans are on French lines. Most natives do not go beyond the primary grades. The knowledge and use of French has spread widely among the natives, but the teaching of Arabic in all schools was made compulsory in 1946. There is a university at Algiers, with faculties of science, arts, law, medicine and pharmacy.

Approximately 86 per cent of the population is native, 12 per cent French and 2 per cent other European. The native population is Berber, with Arab admixture physically assimilated.

The area under cultivation is about 15,000,000 acres, more than 30 per cent of which is owned by European farmers, chiefly in the fertile coastlands. The principal crops are wheat, barley and oats. Algeria is a leading wine producer, with almost 7 per cent of the cultivated area devoted to vines. Production in 1956 was 475,000,000 U. S. gallons, about 15% above normal. Olive trees are widespread; the average annual yield of oil is about 2,500,000 gallons. Tobacco, corn, vegetables, flax, silk, figs and dates are also produced. Much of the area is more adapted to grazing than to agriculture. In 1954 there were 6,008,000 sheep, 893,000 cattle; (1953) 3,231,000 goats and 183,000 camels.

European industries include those dependent on crops, such as distilling and oil and flour milling, as well as the making of leather, tobacco and matches. There are also small native industries, particularly the traditional carpet weaving.

Exports in 1956 were valued at 150,114,000,000 fr.; imports, at 272,692,000,000 fr. Chief exports were wine (38%), iron ore (6%) and citrus fruits (6%); chief imports, petroleum and products (6%), machinery and apparatus (6%) and motor vehicles (5%). France took 76% of the exports and supplied 80% of the imports.

Algeria has 3,396 miles of railway. A central line runs from the Moroccan to the Tunisian frontier with branches north to all the ports and south into the Southern Territories. There is an excellent network of roads of more than 30,000 miles, and motor transport is well developed, including regular passenger and freight lines across the Sahara. Only French ships may normally trade between France and Algeria.

NATURAL FEATURES AND RESOURCES; CLIMATE. Northern Algeria extends inland for 185 to more than 200 miles. South of it are the big, economically unimportant Southern Territories. Low plains cover small areas near the coast, but 68 per cent of Algeria is a plateau between 2,625 and

5,250 feet above sea level. The region between the Sahara and the Mediterranean reaches a high point of 7,641 feet.

Most of the streams are periodic with the rains. The Chélif is the principal river, over 435 miles long. On the Saharan slopes, the oases or the hot sands absorb the streams as soon as they leave the mountain ridges.

Algeria is a leading producer of phosphates (1955: 763,500 metric tons). Iron ore of good quality (55% metal content) is found near the Tunisian frontier and on the Oran coast (1956: 2,604,000 tons). Zinc, lead and salt are also important minerals; and small amounts of oil and coal are produced.

Rainfall averages 20 to 40 inches on the coast, and decreases to virtually none in the Sahara. On the coast, temperatures average about 52° in winter, 77° in summer. Inland, the winter average is about 40° and summer about 81°, although the Sahara summer average is 95° to 105°.

CAMEROON (FRENCH CAMEROONS)—Status: U. N. trust territory.

Capital: Yaoundé (population 30,000).

High commissioner: Pierre Mesmer.

Premier: André-Marie M'Bida.

Foreign trade (1956): exports, 13,150,000 fr. C.F.A.*; imports, 16,669,000,000 fr. C.F.A. Chief exports: cacao (35%), coffee, bananas, timber, cotton.

Agricultural products: cacao (exports 1956: 30,893 metric tons), coffee, bananas, cotton, rubber, millet, sweet potatoes.

Minerals: tin, gold, rutile.

Forest product: timber.

* Colonies Françaises d'Afrique, equal to 2 metropolitan francs.

In 1884 the Cameroons became a German colony (Kamerun), and after the conclusion of World War I the region was divided as a League mandate between Britain and France, four-fifths of the area going to France. Placed under French trusteeship by the United Nations in 1946, the area has political and financial autonomy under a French High Commissioner, who under the 1957 self-government statute is assisted by a cabinet headed by the premier and responsible to the popularly elected territorial assembly. The chief port is Douala; the administrative center, Yaoundé.

The climate is tropical and unhealthy for Europeans (12,269 in 1951); not even in cool months does the temperature generally fall below 70°. Rainfall is heavy on the coast (155 inches a year at Douala) and is fairly even through the year.

FRENCH EQUATORIAL AFRICA—Status: Group of overseas territories.

High commissioner: Paul Chauvet.

Capital: Brazzaville (pop. 1950: 84,090).

Foreign trade (1956): exports, 14,135,000,000 fr. C.F.A. (64% to France); im-

ports, 20,527,000,000 fr. C.F.A. (57% from France). Chief exports: timber (36%), cotton (33%), coffee, diamonds, peanuts.

Agricultural products: cotton (1956 exports: 37,472 metric tons), coffee, peanuts, cacao, palm kernels and oil.

Minerals: gold, diamonds, lead, iron ore.

Forest products: timber, rubber, copal gum, wax.

This area, an early slaving center, was first settled by France in 1839; French hegemony was subsequently extended by exploration and conquest of the native tribes. The territories declared for Free France following the armistice of June 1940, and Brazzaville became capital of De Gaulle's Free French movement.

The high commissioner co-ordinates the administration of the area with the aid of an elected Grand Council. Each of the four territories (Gabun, Middle Congo, Ubangi-Shari, Chad) has a governor, an executive council and a popularly elected territorial assembly. There were, in 1951, 23,403 Europeans; most of the Africans are Negroes. There are Arab and Fulani settlements in the Chad region, and several Moslem sultanates. Natural resources, both forest and mineral, are vast but relatively unexploited. Once economically dependent on forest products, the country developed after World War II as a producer of cotton, diamonds and gold. The area is capable of exporting large quantities of hard okoumé wood.

The climate is tropical—hot and humid—and the average temperature is about 80° (78° at Brazzaville), varying only slightly throughout the year. Rainfall averages about 60 inches annually, with no marked wet or dry seasons.

FRENCH SOMALILAND—Status: Overseas territory.

Capital: Djibouti (population 31,855).

Governor: René Petitbon.

Foreign trade (1955): domestic exports, 253,000,000 Djibouti fr.*; ship stores, 2,727,000,000 Djibouti fr.; imports (excluding ship stores), 2,324,000,000 Djibouti fr. Chief exports: salt, hides.

Mineral: salt.

* 1 Djibouti franc = 1.64 metropolitan francs.

French Somaliland, at the southern entrance to the Red Sea, was acquired by France between 1883 and 1887 by treaties with the Somali sultans, although posts on the coast had been acquired in 1856. This small, largely arid and sparsely populated region is important chiefly because of the port of Djibouti, the main artery of Ethiopia's trade via the Djibouti-Addis Ababa railway. The area is administered by a Governor, responsible to the French government and assisted by a representative council. In 1955 there were an estimated 3,132 Europeans, 28,000 Somalis, 25,000 Danakils and 6,000 Arabs. The climate is hot to torrid, with irregular rainfall.

French West Africa (Group of Overseas Territories) (L'Afrique Occidentale Française)

High Commissioner: Gaston Custin.

Principal cities (est. 1951): Dakar, 229,200 (capital, chief port); (est. 1953) Abidjan, 160,000 (export center); (est. 1952) Bamako, 100,000 (Niger river port).

Monetary unit: Franc C.F.A. (Colonies Françaises d'Afrique, equal to 2 metropolitan francs).

Languages: French, native tongues.

Religions: Animist (53.4%); Moslem (44.2%); Christian (2.4%).

HISTORY AND GOVERNMENT. The St. Louis Colony, founded in 1626 at the mouth of the Sénégal River, was probably the first permanent white settlement in French West Africa in which the French established themselves, largely for the purpose of pursuing the slave trade. After 1876 the coast settlements were extended steadily into the interior through a series of missionary and economic campaigns. In 1895 the colony of French West Africa was formed under one Governor General by the unification of its various components.

Under 1957 legislation the high commissioner, with the aid of an indirectly elected Grand Council, co-ordinates the administration of the eight constituent territories—Sénégal, French Guinea, Ivory Coast, Dahomey, Haute Volta (re-established in 1947), French Sudan, Mauritania and Niger. Each territory is administered by a governor assisted by an executive council which is responsible to a popularly elected territorial assembly whose powers are deliberative rather than legislative.

The area is represented in the French National Assembly, the Council of the Republic and the Assembly of the French Union.

SOCIAL AND ECONOMIC CONDITIONS. Attendance at elementary schools in 1955 was only about 268,000. There were 12,125 secondary school students and 5,284 technical school students.

No racial unity exists in French West Africa, and there is great variation of physique, manner, custom and language. The population is native except for approximately 63,000 Europeans (1951). Non-Negroid tribes include the Saharans, Moors, Tuaregs and Fulbé.

Agriculture has expanded rapidly in recent years. Millet, rice and maize are the principal food crops, and vegetable oils are a leading commercial product. Peanuts, the chief export crop (1955-56: 938,000 metric tons) are cultivated in Sénégal, and palm kernels and oil are produced in Dahomey and the Ivory Coast. Other products are coffee, cotton, cacao and bananas. Stock raising is important in French Sudan and

Mauritania, relatively dry districts in the northern part of the area. Manufacturing is undeveloped except for small native industries. Expansion is hindered by limited power facilities.

Recent trade statistics are as follows (in millions of francs C.F.A.):

	1954	1955	1956*
Exports	58,264	53,277	59,706
Imports	66,445	67,199	66,789

* Provisional.

Leading exports in 1956 were coffee (28%), peanuts (20%), peanut oil (14%), and cacao (14%). France took 66% of the exports and supplied 65% of the imports.

The middle Niger and lower Sénégal Rivers are navigable, but French West Africa's railways (1955: 2,490 mi.) are more important as interior communications. Dakar, with the best harbor on the west African coast, is the principal port and also an important stop on international air routes between South America and Europe. There are several other good ports.

NATURAL FEATURES AND RESOURCES; CLIMATE. The area, comprising a sixth of Africa, is half as big as Europe; it is generally a plateau broken by two mountain ranges. The Futa Jallon, from 2,300 to 4,900 feet in elevation, parallels the coast for about 430 miles; and Mount Nimba, on the Liberian border, rises 5,250 feet. There are also mountainous regions in the Sahara districts to the north. The Niger, 2,600 miles long, is the principal river.

Important minerals include diamonds, gold, iron ore and bauxite; production of gold has dropped sharply in recent years but large-scale exploitation of iron ore and bauxite deposits is in progress. Iron ore production totaled 847,000 metric tons in 1956; bauxite, 452,000 tons. Timber and precious woods are important, especially in the Ivory Coast.

The central and northern parts of the colony have two seasons, rainy and dry. In the southernmost regions there are two rainy seasons, separated by a short dry season. Average annual rainfall at St. Louis is 16.7 inches; at Dakar, 20.2 inches. Temperatures on the west coast average about 70° in winter and 82° in summer, with daily variation of about 20°.

MADAGASCAR AND DEPENDENCIES—Status: Overseas territory.

Capital: Tananarive (Antananarivo) (census 1951: 182,982).

High Commissioner: André Soucadeaux. Foreign trade (1956): exports, 16,300,000,000 fr. C.F.A. (62% to France); imports, 23,094,000,000 fr. C.F.A. (72% from France). Chief exports: coffee (43%), rice (8%), tobacco (6%).

Agricultural products (exports 1956): coffee (52,486 metric tons), rice (36,172 tons), tobacco (3,783 tons), cloves, sugar,

vanilla, manioc, bananas, maize, coconuts.

Minerals: graphite (exports 1956: 15,401 metric tons), mica, phosphates, gold.

Forest products: gum, medicinal plants, rubber, tannins, dyewoods.

Madagascar, lying off the southeast coast of Africa, is the fourth largest island in the world, with a length of 995 miles and an average width of 250 miles. It remained independent under native rulers until 1885, when it came under French protection. French troops conquered the island in 1895 and it became a French colony the following year. The last native ruler, Queen Rànavàlona III, was exiled. Serious native nationalist outbreaks occurred in 1947.

Under 1957 legislation the high commissioner administers the area with the aid of an Executive Council, which is responsible to the indirectly elected Representative Assembly. The powers of the latter are deliberative rather than legislative. Each of the six provinces has a popularly elected Assembly.

The chief occupations are cattle raising (1955: 6,100,000 cattle) and agriculture; there are several food-processing and textile plants. The chief port is Tamatave on the east coast; the capital, Tananarive, is located on the central plateau. In 1953 there were about 53,000 French and 4,000 other European residents. The natives, collectively known as Malagasy, are divided into several tribes.

Dependencies include the islands of Europa, Juan da Nova, Bassas da India, Glorieuses and various scattered subantarctic islands known as Iles Australes. Under a 1955 law, they and French Antarctica were to be a separate overseas territory.

The Comoro Islands (832 sq. mi.), formerly a dependency, became an autonomous overseas territory effective Jan. 1, 1947, and are represented in the French parliament, although still partly under the authority of French officials in Madagascar. They are located in the Indian ocean at the north entrance of the Mozambique channel, about 300 mi. north of Madagascar. The Comoros consist of four main islands and several islets. The French Administrator is assisted by a Privy Council and an elected General Council. The population is largely Moslem. Exports include essential oils, sisal, vanilla, copra, cacao and cloves.

The climate of Madagascar is generally tropical, with a warm and wet season from November to April and a cool, dry season the rest of the year. Temperatures vary between 55.5° and 95° (at Tamatave, 80° in February, 68° in July). Rainfall varies from about 100 inches annually in the east and northwest to 16 inches in the south.

RÉUNION (Bourbon)—Status: Département of Metropolitan France.

Capital: St. Denis (population 41,163).

Prefect: Perreau Pradier.

Foreign trade (1956): exports, 6,286,000.-000 fr. C.F.A. (73% to France); imports, 8,082,000.00 fr. C.F.A. (68% from France).

Chief exports: sugar (83%), essential oils.

Agricultural products: sugar (exports 1956: 185,086 metric tons), vanilla, coffee, maize.

Discovered by Portuguese navigators in the 16th century, the island, then uninhabited, was taken as a French possession in 1638. It is located about 450 miles east of Madagascar, in the Indian Ocean.

There is no indigenous population. About three-quarters of the inhabitants are of European origin; the remainder are Creoles, mulattoes, Negroes, Indians and other Asiatics. Tropical cyclones of hurricane variety are frequent during the change of seasons. Occasionally a *raz de marée* (tidal wave) does great damage. Temperature varies from about 62° to 78°. Sugar-cane cultivation and the production of rum are the principal occupations.

TOGO—Status: Autonomous republic.

Capital: Lomé (population 35,000).

High commissioner: Jean Bérard.

Premier: Nicholas Grunitzky.

Foreign trade (1956): exports, 2,336,000.-000 fr. C.F.A. (77% to France); imports, 2,673,000.000 fr. C.F.A. (44% from France). Chief exports: coffee (35%), cacao (21%), palm kernels and oil, cotton, copra.

Agricultural products (exports 1956): coffee (6,406 metric tons), cacao (4,555 tons), palm kernels and oil, cotton, copra.

Mineral: iron ore.

Forest products: dyewoods, oil palms.

Togo, a part of the former Slave Coast, lies between the British Gold Coast colony and French West Africa. Established as a German colony in 1884, the area was divided as a League mandate by France and Britain at the end of World War I, with France obtaining two-thirds of the total area. It was placed under U. N. trusteeship in 1946. Its status as an autonomous, self-governing republic within the French Union was approved by a popular referendum in Oct. 1956 but the U. N. withheld recognition.

Under the 1956 constitution France through its high commissioner is responsible for foreign affairs, defense and fiscal matters. The high commissioner names the premier, who with his cabinet is responsible to the popularly elected Legislative Assembly.

The southern half is populated principally by the Ewe and Mina tribes; in the north the population is descended largely from Hamitic tribes. There were 1,300 Europeans in 1954. Agriculture and grazing are the chief industries.

The coastline, only 32 miles long, is low, sandy and without harbors. The Togo Hills traverse the central section.

The coastland climate is hot, humid and unhealthy, with wet seasons lasting from March to June and from September to November. Rainfall is about 55 inches yearly in the south.

Tunisia. See Tunisia

WESTERN HEMISPHERE

FRENCH GUIANA (including ININI)—Status: Département of Metropolitan France.

Capital: Cayenne (population 12,934).

Prefect: Pierre Maloy.

Foreign trade (1956): exports, 293,000,-000 fr. (43% to France); imports, 2,815,-000,000 fr. (69% from France). Chief exports: rum (27%), timber, gold.

Agricultural products: bananas, cacao, corn, manioc, rice, sugar cane.

Mineral: gold (exports 1956: 1,075 troy oz.).

French Guiana, lying north of Brazil and east of Surinam (Dutch Guiana) on the northeast coast of South America, was first settled in 1626. Penal settlements, embracing the area around the mouth of the Maroni River and the Iles du Salut (including Devil's Island), were founded in 1852; they were replaced by refugee camps in the 1940's.

During World War II French Guiana at first adhered to the Vichy government, but the Free French took over in March 1943. The large and scantily populated territory of Inini in the hinterland is administered separately. Economic development is extremely backward; transportation is almost entirely by water, conditions are unsanitary and large quantities of foodstuffs must be imported.

January temperatures average 79°, September and October temperatures 82°.

GUADELOUPE—Status: Département of Metropolitan France.

Capital: Basse-Terre (population 11,430).

Prefect: Guy Malines.

Foreign trade (1956): exports, 10,181,-000,000 fr. (66% to France); imports, 12,-695,000,000 fr. (76% from France). Chief exports: sugar (61%), bananas, rum.

Agricultural products: sugar (exports 1956: 123,287 metric tons), bananas, coffee, cacao, manioc, vanilla.

Manufactures: rum, sugar.

Guadeloupe, lying in the West Indies about 300 miles southeast of Puerto Rico, was discovered by Columbus in 1493. French colonization began in 1635. It consists of two large islands, separated by a narrow arm of the sea, and several outly-

ing smaller islands. Most of the population is Negro and mulatto. The largest city and chief port is Pointe-à-Pitre (population 26,160). About half the cultivated area is devoted to sugar cane. The manufacturing of rum and spirits is the principal industry. Mean annual temperature is 78°. Average annual rainfall is 86 inches on the coast and much higher in the interior.

MARTINIQUE—Status: Département of Metropolitan France.

Capital: Fort-de-France (population 58,-763).

Prefect: Gaston Villéger.

Foreign trade (1956): exports, 9,893,000,-000 fr. (86% to France); imports, 13,179,-000,000 fr. (77% from France). Chief exports: sugar (42%), bananas, rum.

Agricultural products: sugar (exports 1956: 72,138 metric tons), bananas, pineapples, cacao, coffee.

Manufactures: rum, sugar.

Martinique, lying in the Lesser Antilles about 300 miles northeast of Venezuela, was probably discovered by Columbus in 1502 and was taken for France in 1635. Following the Franco-German armistice of 1940 it had a semi-autonomous status under the High Commissioner, Admiral Georges Robert, until 1943, when he relinquished his authority to the Free French. The area, administered by a Prefect assisted by an elected council, is represented in the French legislature. The population is mainly Negro and mulatto. Most of the arable land is devoted to sugar cultivation. Fort-de-France, the capital and chief commercial center, has an excellent harbor. Mean annual temperature of the coast region is 80° (77° in January, 83° in June); annual rainfall is 87 inches.

ST. PIERRE AND MIQUELON—Status: Overseas territory.

Capital: St. Pierre (population 3,997).

Administrator: Pierre Sicaud.

Foreign trade (1956): exports, 195,000,-000 fr. C.F.A. (46% to the U. S.); imports, 644,000,000 fr. C.F.A. (51% from Canada). Chief export: fish and products.

The sole remnant of the French colonial empire in North America, these islands were first occupied by the French in 1660. Their only importance arises from proximity to the Grand Banks (10 mi. south of Newfoundland) making them the center of the French Atlantic cod fisheries.

ASIA

Indo-China

HISTORY. Indo-China, at the southeast corner of Asia, first met the West in the 16th century, when Portuguese traders and missionaries arrived.

French influence dates from 1787, and in the 19th century France received preferential treatment for helping the Emperor

of Annam recover his throne. During the last half of the century, France gradually extended influence over all Indo-China.

Until the beginning of World War II, Indo-China was an administrative federation of one colony—Cochin-China; four protectorates—Annam, Tongking, Cambodia and Laos; and a special territory—Kwangchow (returned to China in 1945). These had various degrees of native rule, but the real administrator of each unit was the French Chief Resident.

After France fell in 1940, Vichy authorized the entry of Japanese troops, and the country became one of the springboards for the Japanese campaign against Singapore. When, in March 1945, the Japanese seized control of the whole country, Annam and Cambodia declared their independence. After the Japanese surrender, British and Chinese troops occupied Indo-China in the face of a growing nationalist movement, and restored order for the French authorities, who assumed control officially on March 4, 1946.

French postwar plans for a federation of Indo-China were thwarted by a Communist-led nationalist revolt which erupted in Dec. 1946 and continued until July 1954. In the course of it, the rebels (called Vietminh) extended their control to most of Vietnam (Tongking, Annam and Cochin-China) outside large urban centers and invaded Laos and Cambodia.

Amid the hostilities, Vietnam, Cambodia and Laos were recognized as independent states within the French Union.

The conflict was ended by armistice agreements signed at Geneva, Switzerland, on July 21, 1954, under which Vietnam was cut about in half along the 17th parallel, the northern part going to the Vietminh.

(See separate articles on Vietnam, Cambodia and Laos).

OCEANIA

FRENCH PACIFIC SETTLEMENTS—Status: Overseas territory.

Governor: Jean Toby.

Capital: Papeete, on Tahiti (population 1951: 15,214).

Foreign trade (1956): exports, 659,000,000 fr. C.F.P.* (52% to France); imports, 676,000,000 fr. C.F.P. (30% from the U. S., 30% from France). Chief exports: phosphate (33%), copra, vanilla.

Agricultural products: copra (exports 1956: 20,000 metric tons), sugar, vanilla, tobacco.

Mineral: phosphate (1956 exports: 264,926 metric tons).

* Colonies Françaises du Pacifique, equal to 5½ metropolitan France.

The term French Pacific Settlements is applied to the scattered French possessions in the eastern Pacific—Mangareva (Gam-

bier), Makatea, Marquesas Islands, Rapa, Rurutu, Rimatara, Society Islands, Tuamotu Archipelago, Tubuai and Raivavae—which were organized into a single colony in 1903. The appointed Governor is assisted by a Privy Council and a popularly elected Representative Assembly. The principal and most populous island—Tahiti, in the Society group (pop. 1951: 30,500)—was claimed as French in 1768. The natives are mostly Polynesians.

NEW CALEDONIA AND DEPENDENCIES—Status: Overseas territory.

Capital: Nouméa (population 20,000).

Governor: Aimé Grimald (also French High Commissioner in the Pacific).

Foreign trade (1956): exports, 1,982,000,000 fr. C.F.P. (67% to France); imports, 2,105,000,000 fr. C.F.P. (45% from France). Chief exports: nickel (87%), chromite, coffee.

Agricultural products: coffee, copra, corn, cotton, manioc, rice, tobacco.

Minerals (1956): nickel (6,920 metric tons, matte), chromite (49,190 tons), iron ore.

Sea product: mother-of-pearl.

New Caledonia (6,533 sq. mi.), lying about 1,070 miles northeast of Sydney, Australia, was discovered by Captain James Cook in 1774 and annexed by France in 1853. The government, in the hands of an appointed Governor and an elective Council, also administers the Isle of Pines, the Wallis Archipelago, the Loyalty Islands, the Chesterfield Islands, Walpole, the Huon Islands, Futuna and Alofi, with a total area of 1,121 square miles. The area—taken over in the summer of 1940 by the Free French after a bloodless revolution—is one of the richest of the Pacific islands in mineral resources, particularly nickel and chrome ore. The natives are Melanesians; about one-third of the population is white and one-fifth Indo-Chinese and Javanese. A French penal colony was established in the 19th century. Average temperature on New Caledonia varies between 65° and 72°.

NEW HEBRIDES—Status: Anglo-French condominium.

Capital: Vila (population 1,200).

Foreign trade (1956): exports, 268,117,000 fr. C.F.P.; imports, 195,332,000 fr. C.F.P. Chief exports: copra (80%), cacao.

Agricultural products: coconuts, cacao, coffee.

Sea products: trochus and burghaus shell.

The New Hebrides, under joint Anglo-French administration since 1914, lie northeast of New Caledonia. The islands, about 40 in number, joined the Free French movement after a plebiscite in July 1940. Most of the natives are Melanesians of mixed blood; there were 350 British and 1,300 French in 1952. The largest island is Espiritu Santo (875 sq. mi.). The French and British high commissioners in the Pacific are represented by resident commissioners.

GERMANY

HISTORY. In Caesar's time, the territory that is now Germany was inhabited by barbarous tribes that came originally perhaps from Central Asia. One of these Germanic tribes, the Franks, attained supremacy in western Europe under Charlemagne, who was crowned Holy Roman Emperor in A.D. 800. By the Treaty of Verdun (843), Charlemagne's lands east of the Rhine were ceded to the German Prince Louis. Additional territory acquired by the Treaty of Mersen (870) gave Germany approximately the area she maintained throughout the Middle Ages. For several centuries after Otto the Great was crowned King in 936, the German rulers were also usually heads of the Holy Roman Empire.

Relations between State and Church were changed by the Reformation, which began with Martin Luther's 95 theses, and came to a head in 1547, when Charles V scattered the forces of the Protestant League at Mühlberg. Freedom of worship was obtained by the Peace of Augsburg (1555), but a Counter Reformation took place later, and a dispute over the succession to the Bohemian throne brought on the Thirty Years' War (1618-48) which devastated Germany and left the empire divided into hundreds of small principalities virtually independent of the Emperor. Meanwhile, Prussia was developing into a province of considerable strength. Frederick the Great (1740-86) reorganized the Prussian army and defeated Maria Theresa of Austria in a struggle over Silesia. The conflict with revolutionary France hastened the disintegration of the empire, and in 1806 Francis II of Austria laid down the Imperial German crown. After the defeat of Napoleon at Waterloo (1815), the struggle between Austria and Prussia for supremacy in Germany continued, reaching its climax in the defeat of Austria in the Seven Weeks' War (1866) and the formation of the Prussian-dominated North German Confederation (1867).

At the close of the victorious war with France (1870-71), William I, King of Prussia, was crowned Emperor of Germany (Jan. 18, 1871). Under the guidance of the Imperial Chancellor, Prince Bismarck, Germany took a new place in world affairs, at the same time expanding her foreign trade and home industry rapidly. The Triple Alliance was formed with Austria and Italy in 1882. However, upon the accession of William II (1888-1918), Bismarck was dismissed and Russia was alienated. International rivalry was intensified in the early years of the 20th century, culminating in World War I, in which Germany, supporting Austria-Hungary's demands on Serbia, suffered final defeat. By the terms of the Treaty of Versailles (1919) Germany

lost about 27,000 square miles of territory, including all her colonies, plus Alsace-Lorraine, northern Schleswig, Eupen-Malmédy, Upper Silesia, and considerable areas in the east. William II had abdicated (Nov. 9, 1918), and a federal republic was organized under the Constitution adopted at Weimar in 1919. The Constitution was attacked by both the Right and Left; several Communist uprisings took place in the early 1920s, and in 1923 Adolf Hitler's abortive putsch was defeated. Germany's inability to fulfill the heavy reparations demands stipulated by the Treaty of Versailles led to French occupation of the Ruhr (1923-25). National bankruptcy was avoided by adoption of the Dawes Plan (1924) and later the Young Plan.

The chancellorship of Brüning, leader of the Catholic Center party (1930-32), saw increasing economic and financial distress and the practical cessation of reparations payments. Hitler's rising National Socialist party won a plurality in both the July and November Reichstag elections in 1932, but not until the failure of Franz von Papen and Kurt von Schleicher to form governments did President Hindenburg name Hitler Chancellor (Jan. 30, 1933). With the death of Hindenburg in 1934, Hitler became complete master of Germany, which he rapidly converted into a totalitarian state under the aegis of the Nazi party. All other political parties were banned, and the Jews were subjected to severe persecution. Through his foreign policy, Hitler repudiated the Treaty of Versailles and began full-scale rearmament. In 1935 he withdrew from the League of Nations, and in 1936 he reoccupied the Rhineland and signed the anti-Comintern pact with Japan, at the same time strengthening relations with Italy. Austria was annexed in March 1938. By the Munich agreement (Sept. 1938) he gained the Czech Sudetenland, and in violation of this agreement he completed the dismemberment of Czechoslovakia in March 1939. But his invasion of Poland on Sept. 1, 1939, precipitated British and French declarations of war.

On May 8, 1945, Germany surrendered unconditionally to Allied and Soviet military commanders, and on June 5 the four-nation Allied Control Council became the *de facto* government of Germany.

At the Berlin (or Potsdam) Conference (July 17-Aug. 2, 1945) President Truman, Stalin and Prime Minister Attlee set forth the principles by which the Allied Control Council was to be guided. They were: Germany's complete disarmament and demilitarization; destruction of its war potential; rigid control of industry; decentralization of the political and economic structure. Pending final determination of territorial questions at a peace conference, the three victors agreed in principle to the ultimate

transfer of the city of Königsberg (now Kaliningrad) and its adjacent area to the Soviet Union and to the administration by Poland of former German territories lying generally east of the Oder-Neisse line.

For purposes of control, Germany was divided in 1945 into four national occupation zones, each headed by a Military Governor, assisted by appropriate supervisory and operating staffs.

Efforts to unify Germany were totally unsuccessful, and the western powers were unable to agree with the U.S.S.R. on any fundamental issue. Work of the Allied Control Council was hamstrung by repeated Soviet vetoes; and finally, on March 20, 1948, the U.S.S.R. walked out of the Council. Meanwhile, the U. S. and Britain had taken steps to merge their zones economically (Bizonie); and on May 31, 1948, the U. S., Britain, France and the Benelux countries agreed to set up a German state comprising the three western zones. At the same time the western powers introduced a new German currency.

The Soviet Union replied to these measures by clamping a blockade on all ground communications between the western zones and Berlin. The western Allies, refusing to be driven out of the capital, immediately organized a gigantic airlift to fly supplies into the beleaguered city. Before the Russians were finally forced to lift the blockade on May 12, 1949, 60,000 men were engaged in the airlift.

In return for lifting the blockade, the U.S.S.R. asked only that the Big Four Foreign Ministers meet again to discuss German unification. The conference, meeting in Paris from May 23 to June 20, 1949, ended as usual in a deadlock.

The Big Four Foreign Ministers met once more at Berlin from Jan. 25 to Feb. 18, 1954, again without success. No progress toward German reunification was made thereafter.

German Federal Republic

Area: 94,719 square miles.*

Population (est. Sept. 1956): 50,595,000 (predominantly German).

Density per square mile: 534.2.

President: Theodor Heuss.

Chancellor: Konrad Adenauer.

Principal cities (est. 1953): Hamburg, 1,658,000 (chief port); Munich, 870,000 (Bavarian capital); Cologne, 629,200 (transportation center); Essen, 624,100 (steel center); Frankfurt am Main, 564,400 (manufacturing); Bonn, 130,000 (capital).

Monetary unit: Deutsche Mark (Dm.).

Language: German.

Religions (census 1950): Protestant, 52.2%; Roman Catholic, 43.8%; others, 4.0%.

* Excluding west Berlin.

The German Federal Republic came into formal existence on Sept. 21, 1949, when the Allied High Commission turned over

to it the administration of the U. S., British and French zones of occupation. On May 8, 1949, the constituent assembly at Bonn had approved a Basic Law or Constitution for western Germany; it came into force on May 23, after approval by the *Landtage* of the 11 constituent *Länder*. Parliamentary elections were held on Aug. 14; and on Sept. 12, Free Democratic leader Theodor Heuss was elected President of western Germany. On Sept. 15, the *Bundestag* confirmed his appointment of Konrad Adenauer, leader of the Christian Democratic party, as Chancellor. His party won a sweeping victory in parliamentary elections held Sept. 6, 1953. Heuss was re-elected President on July 17, 1954.

GOVERNMENT. With the coming into force on May 5, 1955, of a series of agreements signed at Paris on Oct. 23, 1954, the Allied occupation came to an end and the Federal Republic attained full sovereignty and independence. The Paris agreements followed the rejection by France of an agreement signed May 27, 1952, creating within NATO a European Defense Community. Under the 1954 agreements, Germany and Italy became members of the Brussels treaty organization created in 1948 and renamed the Western European Union. Germany also became a member of NATO.

The Basic Law or Constitution of the republic provides for a federal form of government headed by a President elected every 5 years by a Federal Convention. The Parliament consists of a *Bundestag* whose members are elected every 4 years by popular vote and a *Bundesrat* whose members are appointed by the *Länder* governments. Actual executive power is in the hands of the Cabinet, answerable to the *Bundestag* and headed by a Chancellor appointed by the President, subject to the right of the *Bundestag* to elect a Chancellor of its own preference. Provision was made for the accession of *Länder* in the Soviet zone. Each of the 10 constituent *Länder* must have a republican form of government with an assembly which is elected by universal suffrage.

The party standing in the *Bundestag* (elections of Sept. 6, 1953) was as follows: Christian Democrats 244, Social Democrats 151, Free Democrats 48, All-German 27; others 17.

One of the 1954 Paris agreements authorized the U. K., the U. S. and France to keep troops in western Germany, not as occupation troops but in view of the "need to ensure the defense of the free world." A protocol specified that German federal armed forces would not exceed the numbers fixed in the EDC treaty of May 27, 1952—i.e., 12 divisions, a tactical air force of about 1,350 aircraft and light coastal defense and escort vessels. Under

the Paris agreements relating to NATO, all forces of NATO countries stationed on the continent of Europe, including those of Germany, are with certain exceptions under the authority of the Supreme Allied Commander, Europe.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Education is compulsory between the ages of 6 and 14. In May 1955 there were 29,465 elementary schools with 4,636,470 pupils, 806 higher elementary schools with 323,409 pupils, 1,572 secondary schools with 775,320 pupils, 487 all-age schools (Hamburg and Bremen) with 299,633 pupils and 17 universities with 88,336 students.

Agriculture. Agriculture is characterized by mixed farming, the climate and the soil permitting cultivation of a variety of crops and most types of livestock. Rye and potatoes are staple crops in the north; grains and sugar beets in the central regions. The northwestern and southern areas are noted for dairying, while the west is the chief fruit- and wine-producing region. The soil is generally poor, and high crop yields are dependent upon large-scale use of fertilizers.

Production data for western Germany (excluding the Saar) are as follows (provisional, in thousands of metric tons):

	1954	1955	1956
Wheat	2,893	3,378	3,487
Rye	4,098	3,495	3,735
Barley	1,920	2,079	2,310
Oats	2,473	2,477	2,451
Potatoes	26,769	22,874	26,756
Beet sugar	1,316	1,297	1,155

In Dec. 1956, western Germany (excluding the Saar) had 11,814,610 cattle, 1,024,898 horses, 14,407,465 hogs and 1,145,465 sheep.

Western Germany is not self-sustaining in food. Difficulties stem to a considerable extent from the fact that Poland now controls the area east of the Oder-Neisse, which contained 28 per cent of prewar Germany's arable land and produced about 25 per cent of its food.

Industry. Western Germany's industry is well-developed and highly diversified. It accounted for about two-thirds of Germany's prewar industrial production and for a large part of iron and steel production. In Dec. 1956, employment in industry was 18,003,000; there were 1,089,000 unemployed.

Production for western Germany (monthly averages, in thousands of metric tons):

	1954	1955	1956
Pig iron and ferroalloys	1,048	1,381	1,474
Crude steel	1,453	1,778	1,932
Cement	1,357	1,564	1,638
Cotton yarn	30.77	31.07	33.02
Wool yarn	8.77	9.55	9.82

Automobiles	43.18*	58.79*	70.65*
Electrical energy	5,656†	6,315†	7,022†
Manufactured gas	1,503‡	1,738‡	1,868‡

* Thousands of units. † Millions of kwh. ‡ Millions of cu. m.

Shipbuilding has regained its former prominence; on Dec. 31, 1956, 240 ships aggregating 798,772 gross tons were under construction. Industrial production in 1956 was 140% of the 1953 level.

Western Germany is a member of the European Coal and Steel Community, which commenced activities on Aug. 10, 1952. It has jurisdiction over the production and allocation of coal and steel by its member nations.

Trade. Recent foreign trade data for the area which now comprises the republic are as follows (in millions of Deutschemarks, including west Berlin):

	1954	1955	1956*
Exports	21,980	25,702	30,848
Imports	19,210	24,353	27,779

* Provisional.

Leading customers in 1956 were the Netherlands (9%), France (8%), Belgium (7%), the U. S. (7%) and Sweden (7%); leading suppliers, the U. S. (14%), France (7%), the Netherlands (7%), Belgium (4%) and Sweden (4%). Leading exports included machines (18%), vehicles (9%), electrical machinery and apparatus (8%), iron and steel products (5%) and coal (3%); leading imports, coal (5%), copper (4%), iron ore (4%), cotton (4%) and wheat (3%).

Communications. In 1954, the western German rail network had a total length of 21,900 miles, all publicly owned. Highway mileage in 1955 was 80,260.

On July 1, 1954, the west German merchant fleet aggregated 2,227,195 gross tons. The principal seaports of western Germany are Hamburg and Bremen.

Inland waterway transportation is of great importance; navigable waterways and canals total 2,650 miles. Over half the traffic is carried on the Rhine River, which links the Ruhr area with Belgian and Dutch ports.

Shipping on the Rhine is controlled by the Central Commission of the Rhine—an international body composed provisionally of U. S., British, French, Swiss, Dutch and Belgian representatives—which was reconvened in October 1945.

Finance. Recent data are as follows (in millions of Deutschemarks):

	1955-56*	1956-57†	1957-58†
Revenue	26,726	27,453	28,827
Expenditure	23,867	32,662	32,186

* Cash results. † Budget estimate.

NATURAL FEATURES AND RESOURCES; CLIMATE. The northern plain, the central hill country and the southern mountain district constitute the main physical divisions of western Germany. The Bavarian plateau in the southwest averages 1,600 feet above sea level, but it reaches 9,721 feet in the Zugspitze, the highest point in Germany.

There are several important navigable rivers. In the south the Danube, rising in the Black Forest, flows east across Bavaria into Austria. The other important rivers flow north. The Rhine, which rises in Switzerland and flows across the Netherlands in two channels to the North Sea, is navigable by smaller ocean-going vessels as far as Cologne. The Rhine and the Elbe, which also empties into the North Sea, are navigable within Germany for ships of 400 tons. The Weser, flowing into the North Sea, and the Main and Mosel (Moselle), both tributaries of the Rhine, are also important.

Minerals and Forests. Aside from rich deposits of coal and potash, western Germany's mineral wealth is not considerable. The Ruhr, Krefeld and Aachen districts constitute one of the world's greatest coal mining regions, with total reserves estimated at 65,000,000,000 tons. Production in this area is handicapped by the prevalence of thin seams, but distribution is favored by easily accessible natural waterways and efficient canals. Known petroleum resources are meager, and supplies of iron ore, copper, lead and zinc are insufficient for domestic needs. Mineral production (excluding the Saar) was as follows in 1956: coal, 134,407,000 metric tons; lignite, 95,233,000 tons; iron ore (metal content 30%), 16,928,000 tons; potash (K_2O content), 1,965,000 tons.

About 23 per cent of the total area of western Germany is covered by commercial forests, which yield timber as well as material for paper, wood fiber, cellulose and other products.

Fishing is an essential part of the economy. In 1956 coast and sea fisheries yielded 695,052 metric tons valued at Dm. 263,334,000. Herring are the most important.

Climate. The climate of western Germany is intermediate between the oceanic climate of western Europe and the continental climate farther east. The average summer temperature is 60° to 62°. The sheltered mountain valleys of the south enjoy a more temperate climate, especially the valley of the Rhine above Mainz. Rainfall is heaviest in the south and west (over 30 inches).

German Democratic Republic

Area: 41,380 square miles.*

Population (est. 1955): 16,500,000* (predominantly German).

Density per square mile: 398.7.

Soviet High Commissioner: G. M. Pushkin.

President: Wilhelm Pieck.

Premier: Otto Grotewohl.

Principal cities (est. 1953): Leipzig, 607,700 (trading, publishing center); Dresden 510,100 (railway center, Elbe port); Karl-Marxstadt (Chemnitz), 298,500 (textiles); Halle am der Saale, 278,400 (railway center); Magdeburg, 252,300 (iron and steel products).

Monetary unit: Ostmark.

Religions (census 1946): Protestant, 81.3%; Roman Catholic, 12.1%; others, 6.6%.

* Excluding east Berlin.

HISTORY AND GOVERNMENT. The so-called German Democratic Republic comprises the Soviet zone of occupation of eastern Germany. It was proclaimed on Oct. 7, 1949, with its seat at Berlin, on the basis of a Constitution adopted May 30, 1949, by a People's Congress chosen under a plebiscite arrangement in elections held in the Soviet zone and eastern Berlin on May 15 and 16, 1949. The Congress elected a People's Council (*Volksrat*) which was transformed on Oct. 7 into a provisional People's Chamber (*Volkskammer*). A Chamber of the States (*Länderkammer*) was nominated on Oct. 10, and on Oct. 11 both chambers elected Communist-leader Wilhelm Pieck as President of the republic and Otto Grotewohl as Minister-President or Premier. The Constitution is soviet in nature and the government is under complete Communist domination. Soviet government supervision is exercised by the Soviet High Commissioner.

The republic lies largely between the Elbe and Oder rivers, including most of Brandenburg, Mecklenburg and the industrial Saxon and Thuringian lands.

SOCIAL AND ECONOMIC CONDITIONS. About 22 per cent of the population is engaged in agricultural pursuits and the area is almost self-sufficient in foodstuffs. Postwar yields have, however, suffered from droughts and shortages of fertilizers. Recent production estimates are as follows (in thousands of metric tons):

	1954	1955	1956
Wheat	1,140	1,273	1,107
Rye	2,582	2,464	2,334
Potatoes	16,473	16,750	
Beet sugar	815	713	670

In Dec. 1955 there were approximately 3,760,000 cattle, 1,807,000 sheep and 9,029,000 hogs.

Most of the industrial establishments, particularly in heavy industry, have been nationalized. The area accounted for 26 per

cent of prewar Germany's industrial production, ranking first in textiles, paper and pulp and ceramics and glass (especially optical glass produced by the famous Jena works). A Two-Year Plan inaugurated in 1949 had the object of raising the volume of production to 81 per cent of the 1936 level by the end of 1950, while a Five-Year Plan initiated in 1951 aimed at doubling the 1936 level by 1955. Unofficial production data for 1955 are as follows: pig iron (1,520,000 metric tons), raw steel (2,500,000 tons), cement (2,950,000 tons).

Foreign trade is carried on through government-owned trading companies. Trade is confined largely to Europe. Important imports include foodstuffs, minerals and textiles; exports include machinery, engineering equipment and chemicals.

Railways, highways and inland waterways were reported in 1957 still inadequate to meet the demands of the area's economy. The rehabilitation and expansion of transport facilities was emphasized in connection with the Two- and Five-Year Plans.

The 1955 budget balanced revenue and expenditure at 38,100,000,000 ostmarks.

NATURAL RESOURCES; CLIMATE. The area is not rich in minerals. It has only minor deposits of coal (1955 production: 3,500,000 metric tons) and deposits of iron ore are scanty and of low quality (1955: 1,700,000 tons). It does have important deposits of lignite (1955: 200,000,000 tons) and crude potash (1955: 1,571,000 tons).

Most of the area is part of a low plain. The climate is temperate for the most part but with more difference between summer and winter than in western Germany. Rainfall averages 20 to 30 inches annually.

Berlin

Area: 341.2 square miles.

Population (est. 1955): 3,300,000.

Berlin, the capital of prewar Germany, is surrounded by the German Democratic Republic. It is occupied by the forces of the U. S., the U. K., France and the U.S.S.R., each having its own sector of occupation. The three western sectors contain 55% of the area and about two-thirds of the population.

The supreme authority in western Berlin is a tripartite Kommandatura which has responsibility for the exercise of the powers reserved to the occupation forces under the Berlin Charter, a document analogous to the former west German Occupation Statute. With the termination of the Allied occupation of western Germany, Allied controls were substantially relaxed.

Other powers of government are exercised by a City Assembly elected by popular vote and a *Magistrat* (city council) chosen by the Assembly.

Supreme authority in the eastern sector of Berlin is exercised by the Soviet High Commissioner. Powers not exercised by him or by the German Democratic Republic are vested in a "rump" city government, which proclaimed itself in power Nov. 30, 1948. Major anti-Communist riots broke out in east Berlin in June 1953.

The Saar

Area: 991 square miles.

Population (est. 1955): 996,000.

Density per square mile: 1,005.0.

Premier: Egon Reinert.

Principal city: Saarbrücken (est. pop. 116,395).

Monetary unit: French franc.

The Saar is an industrial and mining region lying on Germany's western frontier north of Lorraine. Under the Treaty of Versailles it was detached from Germany and placed under the administration of the League of Nations, its coal mines being transferred to France. It voted in Jan. 1935 for reunion with Germany.

Part of the French zone of occupation after World War II, the Saar was politically united with western Germany as one of its constituents on Jan. 1, 1957, under a Franco-German agreement of June 4, 1956, and was to be economically integrated into western Germany by 1960. One of the 1954 Paris agreements provided for the so-called Europeanization of the Saar, but this proposal was rejected by the people in a referendum Oct. 23, 1955. Subsequent Diet elections returned a pro-German majority. Under the Saar's Constitution it had a popularly elected Diet of 50 members, to which the Cabinet headed by the Premier was responsible. There was no head of state as such.

Coal reserves are conservatively estimated at 9,000,000,000 metric tons. Under an agreement concluded with France on Mar. 3, 1950, the mines are under French management with some Saar participation, an annual royalty being paid to the Saar by France. Production in 1956 included 17,088,000 metric tons of coal, 3,372,000 tons of raw steel and 3,036,000 tons of pig iron and ferroalloys.

Greece (Kingdom)

(Hellas)

Area: 51,182 square miles.*

Population (est. 1956): 8,031,000.* (1940, excluding the Dodecanese Greek, 92.8%; Turkish, 3.8%; Macedonian, 1.3%; Spanish, 1%; others, 1.1%.)

Density per square mile: 156.9.*

Sovereign: King Paul I.

Premier: Konstantinos Karamanlis.

Principal cities (census 1951, municipal areas only): Athens, 565,084 (capital); Salonika, 217,049 (seaport); Piraeus, 186,014 (port of Athens); Patras, 79,014 (seaport); Volos, 51,144 (seaport).

Monetary unit: Drachma.
 Languages: Greek, Turkish.
 Religions: Greek Orthodox, 96%; Mohammedan, 2%; Jewish, 1.1%; others, .9%.

* Including the Dodecanese.

HISTORY. Greece, with a recorded history going back to 776 B.C., reached the peak of its glory in the 5th century B.C., and by the middle of the 2nd century B.C., it had declined to the status of a Roman province. It remained within the Eastern Roman Empire until Constantinople fell to the Crusaders in 1204. In 1453, the Turks took Constantinople, and by 1460 Greece was a Turkish province. The insurrection made famous by the poet Lord Byron broke out in 1821, and in 1827 Greece was set up an independent nation, with sovereignty guaranteed by Britain, France and Russia. Prince Otto of Bavaria was recognized as King five years later, but he was ousted by a revolution in 1862. Prince William of Denmark, as George I, succeeded him.

Up to this time Greece consisted only of the Peloponnesus and the lower part of the peninsula north of the Gulf of Corinth. Britain gave Greece the Ionian Islands in 1864, and Thessaly was added in 1881. Greek success in the Balkan Wars of 1912-13 brought the addition of Macedonia, Epirus, Crete and many Aegean Islands. In World War I, Greece kept a precarious neutrality until June, 1917, when King Constantine (who had succeeded George I in 1913) was forced to abdicate in favor of his second son, Alexander. Greece then entered the war on the Allied side. By the Treaty of Sèvres, Greece was awarded Thrace and part of Asia Minor. Turkey, however, drove the Greeks out of Smyrna in 1922.

Greece was proclaimed a republic on March 25, 1924, and there followed strife and dissension between Royalists and Republicans, although fair order was maintained during the premierships of Eleutherios Venizelos from 1928 to 1933.

In 1935, the people voted for the return of King George II, who had abdicated in 1924 after a short rule. In April 1936, General John Metaxas became Premier and by August he had abolished Parliament and set up a dictatorship.

Greece was invaded by the Italians in 1940. By April 1941, the Greeks not only had driven the Italians out of Greece but were well into Albania. The Germans came to Mussolini's rescue, invaded Greece from Bulgaria, and took Athens on April 27, 1941. Starvation and harsh persecution of the Greeks were common during the Axis occupation. After liberation, Greece became a land of conflict with armed bands of Royalists and Communists terrorizing the nation. The government, which had fled the country, returned in Oct. 1944, following Greece's liberation by British

forces. Five years of civil war followed, with government troops fighting Communist-led guerrillas, who were aided by the neighboring Communist satellites of the Soviet Union.

The country approved the return of George II by a large majority in a plebiscite held Sept. 1, 1946. The King returned on Sept. 28 but died April 1, 1947. He was succeeded by his brother Paul I.

An important postwar development in troubled Greece was the extension of U. S. financial and technical assistance, supervised by a U. S. mission. Greek forces thus were able to make good progress against the Communist guerrillas, and the cessation of hostilities was announced on Oct. 16, 1949.

Elections held on Nov. 16, 1952, resulted in a sweeping victory for the Greek Rally party, which won 239 out of the 300 seats in the national assembly. Field Marshal Alexander Papagos, its leader, became Premier on November 18, 1952. On his death Oct. 4, 1955, Konstantinos Karamanlis became Premier. The Greek Rally lost ground in elections Feb. 19, 1956, but retained its majority.

Greece was admitted to NATO in 1951 and signed a defensive alliance with Turkey and Yugoslavia in 1953.

GOVERNMENT AND DEFENSE. Greece is a constitutional hereditary monarchy. Nominal executive power is vested in the King, but the government is administered by a Council of Ministers, headed by the Premier, which must enjoy the Assembly's confidence.

Military service is compulsory. U. S. aid in 1948 made possible an increase in army strength from 120,000 to 132,000; the National Guard was also increased from 30,000 to 50,000. Greek forces, which were advised by a U. S. military mission, were demobilized to some extent following the cessation of hostilities with the guerrillas in Oct. 1949. An infantry unit of 1,000 men and several aircraft were dispatched to Korea. In Dec. 1956, the navy had one cruiser, 2 fleet destroyers, 4 submarines and 19 frigates and escort craft.

SOCIAL AND ECONOMIC CONDITIONS. Education is compulsory for all children between the ages of 6 and 14. Illiteracy was estimated at 23.5% in 1951. In 1954 there were 9,368 elementary schools with 943,722 pupils, 425 secondary schools with 196,207 pupils and 2 universities (located at Athens and Salonika), with (1953) 6,658 students.

About three-quarters of the population engages in agricultural pursuits, although only one-fifth of the land is arable. Most of the cultivated area is devoted to cereals: wheat (1956: 1,270,000 metric tons), barley (254,000 tons) and maize (234,000

tons). There are also olive trees, vines, tobacco (1955: 97,400 tons) and currants. Olive oil production in 1956 was about 153,000 tons. The principal fruits are oranges, lemons, figs, mandarins, apples and pears. In Dec. 1955, there were 957,000 cattle, 8,970,000 sheep and 621,000 hogs. Wool production in 1956 was about 6,000 metric tons (clean basis).

Development of large-scale Greek manufacturing is blocked by lack of coal resources and of capital. The most valuable products are textiles, chemicals and food items. Among other processed or manufactured products are olive oil, wine, spirits, flour, carpets, leather, cigarettes and building materials.

Postwar trade has been financed largely by U. S. aid. Recent figures are as follows (in millions of U. S. dollars):

	1954	1955	1956
Exports	152	183	190
Imports	330	382	464

Leading customers in 1956 were western Germany (20%), France (13%) and the U. S. (12%); leading suppliers, the U. S. (17%), western Germany (16%) and Britain (14%). Leading exports were tobacco (34%) and currants and raisins (16%).

The merchant marine plays a vital part in the national economy. On June 30, 1956, it totaled 347 ships (100 tons and over) aggregating 1,307,336 gross tons, according to *Lloyd's Register*.

Railway mileage in 1955 totaled 1,678; highway mileage in 1953 was 14,221. Reconstruction of the Greek transport system, financed by U. S. aid, was completed in 1949; it included extensive work on highways, port and dry-dock facilities, railways and bridges.

The budget for the prolonged fiscal year 1956-57 (July 1, 1956-Dec. 31, 1957) estimated revenue at 17,227,000,000 drachmas and expenditure at 20,325,000,000 drachmas.

NATURAL FEATURES AND RESOURCES; CLIMATE. North central Greece, Epirus and western Macedonia all are mountainous. The main chain of the Pindus Mountains rises to 9,000 feet in places, separating Epirus from the plains of Thessaly. Greek Thrace is mostly a lowland region separated from European Turkey by the lower Maritsa River.

Among the many islands are the Ionian group off the west coast, 742 square miles in area; the Cyclades group to the south-east, 996 square miles; other islands in the eastern Aegean, including Lesbos, Samos and Khios, 1,486 square miles; and Crete, the fourth largest Mediterranean island, 3,199 square miles. Crete, largely mountainous, is about 160 miles in length, with a width varying from 7 to 35 miles.

The Dodecanese (area 1,035 sq. mi.), a group of 13 islands in the Aegean Sea near

the coast of Asia Minor, were ceded to Greece by the 1947 Italian peace treaty and were formally transferred on March 7, 1948.

Greek minerals are varied but are exploited only moderately. Principal ones are lignite, iron ore, iron pyrites, magnesite, chromite, lead, bauxite, molybdenum, emery, marine salt and the country's famous marble.

A fifth of the country is forested, largely with pine, fir and oak. Resin and turpentine are main forest products. The principal sea product is sponges.

The Greek climate is varied but generally similar to that of other Mediterranean countries. The maritime regions have a temperate climate, with short winters and little snow or frost. In the uplands the winters are long and severe. Precipitation is heaviest in the mountains. Mean temperature at Athens is about 63°, with maximum of 99° in July and minimum of 31.5° in January; annual rainfall there is little more than 15 inches. The summer heat is moderated by sea breezes and cool northerly winds from the mountains.

Guatemala (Republic)

(República de Guatemala)

Area: 42,042 square miles.

Population (est. 1956): 3,349,000 (1950:

Indian, 53.5%; mixed and other, 46.5%).

Density per square mile: 79.7.

President: Luis A. Gonzalez Lopez.

Principal cities (est. 1953): Guatemala, 319,000 (capital); Quezaltenango, 31,000 (coffee, sugar); Puerto Barrios, 18,000 (port); Mazatenango, 13,000 (coffee).

Monetary unit: Quetzal.

Language: Spanish.

Religion: Roman Catholic.

HISTORY AND GOVERNMENT. Once the site of the ancient Mayan civilization, Guatemala was conquered by Spain in 1524 and for the next 300 years was the major center of Spanish government in Central America. Guatemala was one of the founders of the Central American Union in 1823, and in 1839 set itself up as a republic. From 1898 to 1920, the dictator Manuel Estrada Cabrera ran the country, and from 1931 to 1944, General Jorge Ubico Castañeda was the "strong man." In July 1944, the National Assembly elected General Federico Ponce President, but he was overthrown in October, and in December Dr. Juan José Arévalo was elected as the head of a leftist regime which continued to press its reform program in the face of conservative resistance. He took office on March 15, 1945. Jacobo Arbenz Guzmán, administration candidate with pro-Communist leanings, won the Nov. 1950 elections and took office March 15, 1951. He was ousted by anti-Communist forces on June 27, 1954, and a military junta took over.

Col. Carlos Castillo Armas, one of its members, was confirmed as President. He was assassinated July 26, 1957 and was succeeded by Vice Pres. Luis A. Gonzalez Lopez.

A new Constitution has been adopted to take the place of that of 1945, which provided that a President be elected every six years by direct vote and could not succeed himself immediately. Legislative power was vested in a unicameral National Assembly whose members are popularly elected for four-year terms, half the members being elected every two years. Guatemala has an army of about 6,000, plus 3,000 national police. It also maintains a small air force.

SOCIAL AND ECONOMIC CONDITIONS. Education, advanced under Ubico, is free and compulsory. Illiteracy (7 years and over) was 72.2% in 1950. In 1953, 3,537 primary schools had 191,330 pupils and 125 postprimary schools 17,251 pupils. The University of Guatemala at Guatemala City had 4,005 students in 1954.

Most of the ruling class is drawn from the 5 per cent of the population that is white. Spanish is the official language, but at least 18 Indian dialects are spoken. Indians are the chief labor supply.

Agriculture engages 90 per cent of Guatemalans. Coffee accounts for a fifth of the cultivated land and a large part of the exports (production 1956-57: 1,240,000 bags of 132 lb. each). Recent foreign-trade data are as follows (in millions of quetzales):

	1954	1955	1956
Exports*	110.3	109.2	112.1
Imports	86.3	104.3	137.7

* Adjusted for banana undervaluation.

In 1956 the U. S. took 70% of the exports and supplied 69% of the imports. The chief exports were coffee (80%) and bananas (10%). Imports included flour, petroleum products, drugs and textiles.

Guatemalan manufacturing is small and local. The country has 539 miles of public railway connecting the coasts, 180 miles of private railway and 4,000 miles of highways. Puerto Barrios, on the Atlantic side, is the main port of entry, and is linked by rail to the capital.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of Guatemala is mountainous, with many volcanic peaks. The northern part is the great plain of Petén, largely uncultivated and sparsely populated. The narrow Pacific slope, well watered and fertile, is the most densely populated and the most productive part.

Guatemala has deposits of gold, silver, lead, tin, copper, mercury, coal, antimony, salt, chromite and sulfur, but many of these minerals exist in insufficient quantity to justify exploitation, and only lead and chromite are produced commercially.

The country's vast forests, mostly in the Petén region, yield chicle for chewing gum, cinchona bark, a small amount of rubber, and dyewoods and cabinet woods.

The climate is hot and humid on the coasts, with heavy rainfall (as high as 195 inches), but is temperate in the highlands.

Haiti (Republic) (République d'Haïti)

Area: 10,748 square miles.

Population (est. 1956): 3,350,000 (Negro, 95%; mulatto, 5%).

Density per square mile: 311.7.

President: François Duvalier.

Principal cities (census 1950)*: Port-au-Prince, 142,840 (capital, chief port); Cap Haïtien, 24,957 (seaport); Gonaïves, 13,534 (farming district); Les Cayes, 11,835 (seaport; coffee).

Monetary unit: Gourde.

Language: French.

Religion: Roman Catholic.

* Cities proper, excluding surrounding communes.

HISTORY. Haiti, the only Negro republic in the Western hemisphere, occupies the western third of the island of Hispaniola, which was discovered by Columbus in 1492. Its political past is stormy, and today it is the smallest and most thickly populated of the American republics—a nation beset by illiteracy and poverty.

After successive Spanish and French domination, Haiti became a kingdom in 1801 under Toussaint L'Ouverture, a Negro leader. He was later captured by the French and died in prison, but the kingdom lasted and declared its independence in 1804, becoming a republic in 1820. In 1822 Haiti took over all of Hispaniola, and carried on until 1843, when the eastern two-thirds of the island revolted and established the Dominican Republic. Today the island is the only one in the world containing two sovereign nations.

Decades filled with revolution, corruption and disease came to a bloody climax in 1911-15, when Haiti had seven presidents in four years. After the assassination of the last one, United States Marines moved in. By a 1916 treaty, the United States agreed to help administer the country until the Haitians proved themselves capable of orderly self-government. The last Marines left in 1934, but a U. S. fiscal expert continued to supervise customs until 1941. On January 11, 1946, President Elie Lescot was driven from the country by revolution, and a three-man military junta took over until the election of President Dumarsais Estimé on Aug. 16, 1946. He was ousted in 1950 and succeeded after new elections by Paul E. Magloire, who in turn was ousted in Dec. 1956.

GOVERNMENT. Normally the President is elected for six years by two-thirds vote of the National Assembly. That body consists of a 37-member Chamber of Deputies, elected for four years by popular vote, and a 21-member Senate elected for six years. The Garde d'Haiti, about 5,000 strong, serves as army and police force.

SOCIAL AND ECONOMIC CONDITIONS. Most Haitians are descended from African slaves. Their illiteracy rate is estimated at 90 per cent. Mulattoes—lightened by the blood of the early French settlers—dominate the political and social life of the nation. Many of them are Paris-educated. While the ruling classes speak pure French, most of the people speak the patois of Creole French.

Haiti is predominantly agricultural. Coffee, which makes up more than 50 per cent of Haitian exports, is the principal crop, followed by sisal, sugar cane, cotton, bananas and cacao. Coffee exports in 1954-55 amounted to 19,646 metric tons. Manufacturing is almost entirely for local consumption, but there are several sisal factories and sugar refineries.

Recent trade data are as follows (in millions of gourdes):

	1953-54	1954-55	1955-56
Exports	277.7	174.3	232.6
Imports	237.8	196.0	231.5

Leading exports in 1955-56 were coffee (72%), sisal (14%) and sugar (5%). Leading customers were the U. S. (34%), Belgium (20%) and Italy (18%); leading suppliers, the U. S. (62%), Canada (7%) and Germany (4%).

In 1953 Haiti had about 2,000 miles of improved road and about 180 miles of railway. International air service is provided by PAA and KLM.

Recent public finance data, in millions of gourdes:

	1953-54	1954-55	1955-56*
Revenue	161.1	191.0	128.2
Expenditure	175.0	189.4	128.2

* Budget estimate.

NATURAL FEATURES AND RESOURCES; CLIMATE. Haiti, about the size of Maryland, is two-thirds mountainous, with the rest marked by great valleys, extensive plateaus and small plains. The most densely populated and productive region is the Cul de Sac plain, near Port-au-Prince.

Minerals, relatively unexploited, include gold, silver, iron, copper, antimony, tin, coal, nickel and gypsum. In 1943, a sizable bauxite deposit was found and signed over for U. S. development. Inland Haiti has forests of mahogany, pine, lignum vitae and other commercial woods.

The climate is hot on the coast, temperate in the mountains, with hurricanes

frequent in the May-to-October rainy season. Port-au-Prince has a mean annual temperature of 81°. Annual rainfall in Haiti varies from about 20 to 100 inches.

Honduras (Republic) (República de Honduras)

Area: 43,277 square miles.

Population (est. 1956): 1,711,000 (1945: mestizo, 89.9%; Indian, 6.7%; Negro, 2.1%; white, 1.3%).

Density per square mile: 39.5.

Executive: Military junta.

Principal cities (census 1950): Tegucigalpa (including twin city of Comayagua), 72,385 (capital); San Pedro Sula, 21,139 (bananas); La Ceiba, 16,645 (seaport, bananas); Tela, 12,614 (seaport).

Monetary unit: Lempira.

Language: Spanish.

Religion: Roman Catholic.

HISTORY AND GOVERNMENT. Columbus discovered Honduras on his last voyage in 1502; it was a Spanish colony and part of Guatemala until 1821, the year of the general Central American revolt against Spain. Honduras declared its independence in 1838, and has been troubled by revolution and war ever since. American Marines intervened in 1903 and 1923. In 1931, 1932 and 1937, major revolutions were crushed by force. The Nicaraguan-Honduras boundary dispute of 1937 almost caused war, and in April 1945, the country was invaded from Guatemala by a group of Honduran exiles, who were suppressed.

Julio Lozano Díaz, who assumed power Dec. 6, 1954, when constitutional rule ceased, was himself ousted Oct. 21, 1956, by a military junta.

Military service is compulsory. The army is estimated to be slightly under the 2,500 strength agreed upon by the Central American states.

SOCIAL AND ECONOMIC CONDITIONS. Education is free and supposedly compulsory, but less than 25 per cent of the children go to school. The government is trying to reduce illiteracy, which was 64.8% according to the 1950 census. In 1953-54, 2,214 primary schools had 117,292 pupils; secondary, normal and commercial schools had 6,847 students and the National University at Tegucigalpa 843 students.

The Honduran economy depends on bananas, which usually account for more than 50 per cent of the nation's exports. The biggest plantations are along the northern coast. Exports in 1955 totaled 10,929,000 count bunches (50 lbs. each), more than 90 per cent of which were produced by two U. S. companies. Other crops are corn, coffee, rice, henequen, tobacco and coconuts. Honduras also is an important source of sarsaparilla. Cattle raising and dairy farming flourish on rich

pasture lands. Manufacturing is small and local.

Recent foreign trade data are as follows (in millions of lempiras):

	1954	1955	1956
Exports	109.2	100.7	145.1
Imports	103.1	108.6	117.2

In 1955 the U. S. took 68% of the exports and supplied 66% of the imports. Leading exports were bananas (46%), coffee (22%) and silver (7%).

Honduras' railroads—788 miles, including branch lines—are almost entirely owned by fruit companies and used to transport bananas; they are confined to the northern coastal area. Air transportation is of great importance.

NATURAL FEATURES AND RESOURCES; **CLIMATE.** Honduras, in the north central part of Central America, has a 400-mile Caribbean coast-line and a 40-mile Pacific frontage. Generally mountainous, it has fertile plateaus and river valleys and narrow coastal plains.

Gold and silver are the most important mineral products of Honduras. Copper and iron exist in paying quantity but are undeveloped. The country is noted for rich forest resources, particularly the tropical hardwoods.

The climate is oppressive in the coastal lowlands, pleasant in the interior highlands. At Tegucigalpa, maximum temperature is about 90° (in May), and minimum 50° (December).

Hungary (Republic)

Area: 35,905 square miles.

Population (estimated 1956): 9,906,000 (Magyar, German, Slovak).

Density per square mile: 275.9.

Chairman of Presidium: István Dobi.

Prime Minister: Janos Kadar.

Principal cities (est. 1954): Budapest, 1,781,085 (capital, Danube port); Miskolc, 135,780 (industrial center); Debrecen, 113,243 (livestock); Szeged, 88,590 (textiles, wheat); Pécs, 87,140 (farming).

Monetary unit: Forint.

Languages (census 1949): Hungarian, 98.7%; Slovak, .3%; German, .2%; Rumanian, .2%; others, .6%.

Religions (est. 1949): Roman Catholic, 70.6%; Calvinist, 22.8%; Lutheran, 3.3%; Jewish, 1.9%; Greek Orthodox, .4%; others, 1%.

HISTORY AND GOVERNMENT. About two thousand years ago, Hungary was part of the Roman provinces of Pannonia and Dacia on the empire's borders. In A.D. 894 it was invaded by the Magyars, who founded a kingdom. Christianity was accepted during the reign of Stephen I (St. Stephen) from 997 to 1083. The peak of Hungary's great period of medieval power came in 1342-82 under King Louis the

Great (Louis I) of Anjou, whose dominions touched the Baltic, Black and Mediterranean seas. When the Turks smashed a Hungarian army in 1526, western and northern Hungary accepted Hapsburg rule to escape Turkish occupation. Transylvania became independent under Hungarian princes. Intermittent war with the Turks was waged thereafter for some years.

After the suppression of the 1848 revolt against Hapsburg rule led by Louis Kossuth, the dual monarchy of Austria-Hungary was set up in 1867.

The dual monarchy was defeated with the other Central Powers in World War I, and the new Hungary underwent hard times. First there was a short-lived Socialist republic in 1918. The chaotic Communist rule of 1919 under Béla Kun ended with the Rumanians occupying Budapest on Aug. 4, 1919. When the Rumanians left, Admiral Nicholas Horthy entered the capital with a national army. The Treaty of Trianon of June 4, 1920, cost Hungary 75 per cent of its land and more than 50 per cent of its population. Meanwhile, the National Assembly had restored the legal continuity of the old monarchy; and on March 1, 1920, Horthy was elected Regent.

After 1920, Hungary was in effect ruled by its great land owners, but the turn came in 1932 with the accession of General Julius de Gömbös, a pro-Fascist, as Prime Minister. Under Gömbös and his successors (Kaloman Daranyi in 1936 and Béla Imrédy in 1938) co-operation with Italy and Germany was Hungary's guiding principle. Hungary signed the anti-Comintern pact on Jan. 13, 1939, and the Three Power Pact of Germany, Italy and Japan on Nov. 20, 1940. As inducement and reward for these actions, Hungary got part of Slovakia and all of Ruthenia from Czechoslovakia in 1938 and 1939, and northern Transylvania from Rumania in 1940.

Following the German invasion of Russia on June 22, 1941, Hungary joined the attack against the U.S.S.R., but the war was not popular and Hungarian troops were almost entirely withdrawn from the eastern front by May 1943. The government of Nicholas von Kállay was overthrown March 19, 1944, and German occupation troops set up a puppet government after Admiral Horthy's appeal for an armistice with advancing Soviet troops had resulted in his overthrow on Oct. 16. The German regime soon fled the capital, however, and on Dec. 23 a provisional government was formed in Soviet-occupied eastern Hungary. On Jan. 20, 1945, it signed an armistice in Moscow. On Feb. 1, 1946, the National Assembly approved a constitutional law abolishing the 1,000-year-old monarchy and establishing a republic.

Through its control of the police, the Communist party forced Prime Minister Ferenc Nagy to resign on May 30, 1947, and secured the appointment of a left-wing Smallholder, Lajos Dinnyes, in his place. The Communists emerged as the strongest single party in national elections held Aug. 31, 1947. President Zoltan Tildy resigned July 30, 1948, and was replaced by leftist Arpad Szakasits. Istvan Dobi, also a left-wing Smallholder, replaced Dinnyes on Dec. 10, 1948.

The Communist regime devoted itself to the transformation of Hungary into a people's democracy modeled after the U.S.S.R. The country, however, almost shook the Soviet yoke in the fall of 1956 but Soviet troops intervened and Janos Kadar took over as prime minister on Nov. 4 with Soviet support.

The Soviet-type Constitution adopted by Parliament on Aug. 18, 1949 declared Hungary to be a "people's republic." The supreme organ of state control was declared to be the Parliament, with deputies elected every 4 years by direct vote. When Parliament is not in session, power is exercised by the Presidium headed by a Chairman. Executive power is vested in the Cabinet headed by the Prime Minister.

Only the Communist-controlled left-wing coalition was represented in the National Assembly after elections held May 15, 1949, in which only one slate of candidates was presented.

PEACE TREATY OF 1947. The final peace treaty, which took effect Sept. 15, 1947, fixed Hungary's frontiers as they were on Feb. 1, 1938, except that a small bridgehead on the south bank of the Danube opposite Bratislava was ceded to Czechoslovakia. Hungary was to pay reparations of \$300,000,000 over a period of 8 years, \$200,000,000 to the Soviet Union and \$100,000,000 to Yugoslavia and Czechoslovakia. The treaty also provided freedom of navigation on the Danube for nationals of all states.

The strength of Hungarian armed forces was fixed by the treaty as follows: army, 65,000, including frontier, anti-aircraft artillery and river flotilla personnel; air force, 90 planes with a personnel of 5,000. Actual strength of the army by 1956 was thought to be about 280,000.

SOCIAL AND ECONOMIC CONDITIONS. Education is state-controlled and is compulsory between the ages of 6 and 14. Parochial schools were nationalized in 1948. Illiteracy (7 years and over) was estimated at 5% in 1949. In 1954 there were 6,185 elementary schools with 1,208,000 pupils and 405 secondary schools with 162,500 pupils. The 21 institutions of higher learning (including 5 universities) had 47,500 students.

Agriculture is the basis of Hungarian economic life, engaging more than half the population. The Land Reform Act issued in March, 1945, provided for the confiscation of all estates over 1,500 acres; about 8,000,000 acres were divided among some 500,000 families. Cereals grown in the fertile Danubian plains are the chief crops. Leading crops in 1956 were wheat (1,700,000 metric tons), potatoes (1955: 2,470,000 tons), barley (630,000 tons), rye (450,000 tons), oats (160,000 tons), maize (1955: 2,910,000 tons) and sugar beets.

In addition, cultivation of vines, fruit and garden produce is important; the famous Tokay wine is produced on the southern slopes of the Hegyalja in the northeast. Wine production averages 100,000,000 U. S. gallons annually (1956: 92,000,000 U. S. gallons).

Horse-breeding is a traditionally important branch of agriculture. Hungarians have a great love for horses, and their excellent breeds were exported in large numbers before World War II. Livestock in 1956 included 1,930,000 sheep, 6,056,000 hogs, (1955) 1,983,000 cattle, 550,000 horses.

The dominant industries are all based on agriculture, with flour milling in first place, followed by sugar refining, brewing and canning. The second group of industries make hardware and machinery. Most of the machine industry is concentrated in Budapest and Győr. Cotton leads the textile industry, especially in Budapest, which is also a center of woolen manufactures. Hemp and flax weaving are important. An estimated 885,000 persons were employed in industry in 1954. Almost all industrial facilities were nationalized under laws passed in 1946, 1948 and 1949. In addition, the Soviet Union took over all German-owned plants as reparations, and in 1946 Soviet-Hungarian companies were formed to exploit bauxite, petroleum, and air and river navigation; the Soviet shares in these companies were sold to Hungary in Nov. 1954.

Total trade in 1954 (imports and exports) was estimated by the U. N. Economic Commission for Europe at \$950,000,000, of which \$660,000,000 was with the countries of the Communist group. Leading exports ordinarily include grain, textiles, live animals and animal products, and machinery.

The focal point in the country's transportation system is the Danube River, navigable for 423 miles in Hungary. The nation's central location makes it the center of an important transit trade; its pre-war river fleet was the largest on the Danube. Railroad mileage in 1951 totaled 7,100; highway mileage in 1955, 39,569.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of Hungary is a fertile,

rolling plain lying east of the Danube, and drained by the Danube and the Tisza Rivers. In the extreme northwest is the Little Hungarian Plain. South of that area is Lake Balaton, 250 square miles, the largest lake of western and central Europe.

While Hungary generally is mineral-poor, it has an estimated 250,000,000 tons of bauxite—about 20% of the world's known reserves. Production in 1955 was estimated at 1,290,000 metric tons. The coal is of low quality and is insufficient to meet domestic needs; production in 1955 was estimated at 1,920,000 metric tons and that of lignite at 20,800,000 tons. Other minerals include iron ore, manganese and gold. Petroleum production in 1955 was about 12,300,000 barrels.

About 12 per cent of Hungary is forested, but the products are of little importance. There are valuable fisheries in Lake Balaton and on the Danube.

Hungary's mean annual temperature ranges from 48° in the north to 52° in the south. Precipitation varies from 30 to 35 inches in the Bakony Forest to less than 15 inches in the east; most of the rain falls in May and June. High summer temperatures and a long autumn are favorable to agriculture.

Iceland (Republic)

(Island)

Area: 39,768 square miles.*
Population (est. Dec. 31, 1956): 162,391
(almost entirely Icelandic).
Density per square mile: 4.1.
President: Asgeir Asgeirsson.
Prime Minister: Hermann Jonasson.
Principal city (est. 1955): Reykjavik,
63,666 (capital and only large city).
Monetary unit: Króna.
Languages: Icelandic, Danish.
Religion: Evangelical Lutheran.

* Including several off-shore islands.

HISTORY AND GOVERNMENT. Iceland was first settled shortly before 900, mainly by Norse. A Constitution drawn up about 930 created a form of democracy and provided for an Althing, or General Assembly, now the oldest legislative body in the world. In 1262-64, Iceland came under Norwegian-Danish rule. In 1874 Icelanders obtained their own Constitution. In 1918 Denmark recognized Iceland as a separate state with unlimited sovereignty, but still nominally under the Danish King. On June 17, 1944, after a popular referendum, the Althing proclaimed Iceland a completely independent republic.

The British occupied Iceland in 1940, immediately after the German invasion of Denmark. In 1942, the United States took over the burden of protection. Iceland refused to abandon its neutrality in World War II, and thus forfeited charter member-

ship in the United Nations, but it was cooperative with the Allies throughout. Iceland joined the North Atlantic Treaty Organization in 1949, and in May 1951, U. S. troops again landed at Iceland's request to aid in its defense preparations. Withdrawal of an Icelandic request for evacuation of U. S. troops was announced Dec. 6, 1956.

Constitutionally, the President of Iceland is elected for four years by popular vote. Executive power of the state resides in the Prime Minister and his Cabinet. The Althing is composed of two houses, one with 17 members and the other with 35; each has equal constitutional power. Iceland has no army or navy.

SOCIAL AND ECONOMIC CONDITIONS. Illiteracy is virtually unknown in Iceland. Education is compulsory from 7 to 15, and mobile schools are sent traveling through the sparsely settled areas. When the University of Iceland, established in 1911, needed new buildings in 1935, the government licensed it to conduct a national lottery to raise the funds. The high number of scholarships and the low tuition fees make higher education virtually free.

Iceland publishes more books, newspapers and magazines per capita than any country in the world. Its language, Icelandic, has no dialects and has changed little through the centuries. In addition, Danish is widely understood and spoken. The Evangelical Lutheran Church is state-supported, but there is complete religious freedom.

Approximately six-sevenths of Iceland is unproductive, and only one-fourth of one per cent is under cultivation. With about 30 per cent of the population engaged in farming, sheep raising is the most important branch of this industry. Hay, potatoes and turnips are the principal crops.

Recent trade data are as follows (in millions of krónur):

	1954	1955	1956
Exports	845.9	847.9	1,031.0
Imports	1,130.4	1,264.3	1,468.1

Fish and fish products accounted for 93% of the exports in 1956. Leading customers were the U.S.S.R. (20%), the U. S. (12%), Britain (9%) and western Germany (9%); leading suppliers, the U. S. (17%), the U.S.S.R. (17%) and western Germany (10%).

Iceland has no railways. Motorable roads totaled about 5,500 miles in 1956. In Oct. 1956 the merchant marine had 598 vessels (100 tons and over) aggregating 108,915 gross tons.

NATURAL FEATURES AND RESOURCES; CLIMATE. Iceland, a bleak, volcanic island about the size of Kentucky, has maximum dimensions of 298 by 194 miles; it is mostly

tableland, high, rugged and barren. It is one of the world's most volcanic regions.

Small fresh-water lakes are found throughout the island, and there are many natural oddities, including hot springs, geysers, sulfur beds, canyons, waterfalls and swift rivers. More than 13 per cent of the area is covered by snowfields and glaciers, and most of the people live in the 7 per cent of the island comprising fertile coastlands. Vegetation is of the Arctic type, mostly stunted. Except for peat and fisheries, Iceland has no natural resources.

About one-sixth of the people are engaged in fishing, and fish and fish products make up the bulk of Iceland's exports. The annual catch averages approximately 350,000 metric tons (1956: 443,709 tons). Many European fishing craft visit Iceland's fisheries, which lead the world in cod and are important for herring, plaice and halibut.

The Gulf Stream modifies Iceland's climate to make it much like that of southern Canada, though with longer winters and shorter summers. The mean annual temperature at Reykjavik is 39.4°, with January the coldest month (34.2°) and July the warmest (51.6°). Rainfall varies from about 12 inches annually to 85.

Indonesia (Republic)

(Republik Indonesia)

Area: 575,893 square miles.*

Population (est. 1956): 84,654,320* (Indonesian, except for an estimated 1,500,000 Chinese and 100,000 Europeans in 1951).

Density per square mile: 147.0*

President: Achmed Sukarno.

Premier: Djuanda Kartawidjaja.

Principal cities (est. Dec. 31, 1956): Jakarta, 1,927,785 (capital); Surabaya, 980,905 (industrial center); Bandung, 870,346 (commercial center, west Java); Semarang, 389,970 (seaport, central Java); Surakarta, 380,843 (industrial center); Makassar, 346,080 (coffee, teak); Medan, 303,261 (rail center, Sumatra).

Monetary unit: Rupiah.

Languages: Bahasa Indonesia (Malay) (official), Dutch, Javanese, Sundanese, Madurese.

Religions: Moslem (predominant), Christian (about 2,500,000), Brahmin, Buddhist.

* Excluding Netherlands New Guinea.

HISTORY. The sovereign state of Indonesia, a group of islands with a total area more than twice that of Texas, constitutes one of the world's richest natural areas. These islands—Sumatra, Java, Madura, central and southern Borneo, Celebes and the Moluccas—would reach from San Francisco to Honolulu if their extent was transposed to the eastern Pacific. They have great wealth in tin, rubber, spices, oil, quinine and copra.

During the first few centuries of the Christian era, most of the islands came under the influence of Hindu priests and traders who spread their culture and religion. Moslem invasions began in the 13th century, and most of the area was Moslem by the 15th century. Portuguese traders arrived early in the 16th century but were ousted by the Dutch about 1595. After Napoleon subjugated the Netherlands homeland in 1811, the British seized the islands but returned them to the Dutch in 1816. In 1922 the islands were made an integral part of the Netherlands kingdom.

In World War II, the Japanese military occupation with nominal native self-government continued until Aug. 1945, except in outlying parts of New Guinea and Borneo. About the time of the Japanese surrender, a self-styled Indonesian Republic headed by Achmed Sukarno sprang up and took over effective control of parts of Sumatra and Java. Allied forces, mostly British Indian troops, moved in, and fighting between them and the nationalists continued until Nov. 15, 1946, when Dutch-Indonesian parleys resulted in a draft agreement initialed at Linggadjadi, near Cheribon. The agreement was formally signed by Dutch and Indonesian authorities on March 25, 1947.

This agreement contemplated the formation by Jan. 1, 1949, of a Netherlands-Indonesian Union, consisting on the one hand of the Netherlands, the Netherlands Antilles and Surinam and on the other of the United States of Indonesia, which was to be a sovereign nation composed of three equal states—the Republic of Indonesia, East Indonesia and Borneo. Differences of interpretation ensued, and the Dutch resorted to force on July 20, 1947. Both sides issued cease-fire orders on Aug. 4, 1947, in response to a call from the U. N. Security Council.

The U. N. named a Good Offices Commission under whose auspices the Dutch and the Republic signed another truce on Jan. 17, 1948, aboard the U.S.S. *Renville*. A provisional federal government for the whole area was installed on Mar. 9, 1948, but difficulties between the Dutch and the Republic continued. On Dec. 18, 1948, Dutch forces instituted "police" action against Republican areas and seized the Republican leaders. Hostilities ceased Jan. 1, 1949, following U. N. intervention. On May 7, the Dutch agreed to return the exiled Republican regime to central Java.

On Nov. 2, 1949, Dutch and Indonesian leaders agreed upon the terms of union between the Netherlands and Indonesia. Dr. Sukarno was elected President of the federation on Dec. 16 by representatives of the Indonesian states, and the first all-Indonesian Cabinet was formed with Moham-

med Hatta as Premier. The transfer of sovereignty took place at Amsterdam on Dec. 27, 1949.

The principle of federalism was discarded on Aug. 4, 1950, and Indonesia became a unitary state. The attaining of independence was followed by repeated financial, economic and political crises and weak Cabinets. Relations with the Netherlands were strained by a dispute over the status of Netherlands New Guinea and proposals for the termination of the union; the latter finally was dissolved Aug. 11, 1954.

GOVERNMENT AND DEFENSE. Indonesia is a republic of 10 provinces under the Constitution promulgated on Aug. 15, 1950. Legislative power is vested in the 260-member Parliament. The President and the Premier and his Cabinet exercise executive power. A Constituent Assembly to draft a new Constitution was elected commencing in Dec. 1955.

The republic's first general elections, held between Sept. 29 and Nov. 30, 1955, divided the 260 seats as follows: Nationalist, 57; Masjumi (Moslem), 57; Nahdatal Ulama (Moslem Schoolmen's League), 45; Communist, 39; others, 62.

Military service is not compulsory. The army is to be stabilized at 300,000 men. The navy (1956) had 1 destroyer, 4 corvettes, 6 patrol ships and many smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. School attendance is not compulsory. Illiteracy was officially estimated at 47% in 1952. In 1955 there were 29,629 elementary schools with 6,316,233 pupils and 1,525 secondary schools with 385,365 pupils. The 23 institutions of higher learning had 19,063 students.

The islands of Java and Madura, with only nine per cent of the area, have more than two-thirds of the population, and are among the most densely settled areas in the world (more than 1,000 per sq. mi.). The people, including about 137 races and tribes, are mainly of Malayan stock, with the Javanese the most advanced.

Agriculture engages about 70 per cent of the adult males. Rich in a variety of crops, the islands prior to World War II produced about 31 per cent of the world's copra, 37 per cent of its rubber, 83 per cent of its pepper, and nearly all of its quinine. The big-estate agriculture on Java and Sumatra is devoted mainly to export. The rest is subsistence agriculture. Rice is the staple food and chief crop; production in 1956 was 14,601,200 metric tons (paddy). Major plantation crops, with 1956 production in metric tons, are rubber, 697,200; (estates only) tea, 42,629; coffee, 12,783; cinchona bark, 2,249; palm kernels, 41,389; sugar, 785,581. Others are copra (exports 1955: 159,200 tons), cacao, spices, agava

fiber and kapok. In addition to rice, the chief food crops of the Republic are maize (1,904,800 tons in 1956), cassava, sweet potatoes, peanuts and soybeans.

In 1955 there were an estimated 4,073,000 cattle, 2,807,000 sheep, (1954) 631,000 hogs, 621,000 horses and 2,911,000 buffalo.

Industry, especially in Java, developed rapidly after 1930. In addition to industries connected with the processing of the rich natural products, there were established chemical works, textile and paper mills, soap factories, breweries, shipyards, a Goodyear tire and rubber plant and a General Motors assembly plant.

Indonesia is primarily an importer of consumer and capital goods and an exporter of mineral and plantation products. Recent trade data are as follows (in millions of rupiahs):

	1954	1955*	1956*
Exports	9,878.7	10,618.0	10,054.6
Imports	7,174.5	6,887.7	9,725.4

* Preliminary.

Chief exports in 1956 were rubber (40%), petroleum and products (25%), tin (7%), copra (4%) and tea (3%). Leading customers were Singapore (21%), the Netherlands (19%), the U. S. (16%), Britain (10%) and Malaya (3%); leading suppliers, the U. S. (16%), Japan (16%), the Netherlands (11%), western Germany (9%) and Britain (6%).

The highway network totaled over 46,000 miles in 1954, and there were about 4,200 miles of railway, of which about three-fourths were in Java and a fourth in Sumatra. According to *Lloyd's Register*, the merchant marine had 152 ships (100 tons and over) aggregating 101,631 gross tons on June 30, 1956.

Recent financial data are as follows (in millions of rupiahs):

	1954	1955*	1956*
Revenue	11,539	13,556	18,654
Expenditure	15,141	17,053	19,654

* Budget estimate.

The public debt, consolidated and floating, was reported on Dec. 31, 1956, at 19,712,000,000 rupiahs, of which 11,876,000,000 rupiahs represented the floating debt.

NATURAL FEATURES AND RESOURCES; CLIMATE. A backbone of high mountain ranges with many snow-capped peaks extends throughout the main islands of the archipelago. Earthquakes are frequent, and there are many active volcanoes, 90 of them in Sumatra. Borneo is heavily forested.

Petroleum is the principal mineral product of modern Indonesia. The fields, in Sumatra, east Borneo and east Java, produced 12,730,160 metric tons (about 94,500,000 barrels) in 1956.

The tin industry attained prewar levels more rapidly than others after World War II; production in 1956 was 30,536 metric tons. Other important minerals include bauxite (1956: 303,300 metric tons), coal (828,239 tons), salt, nickel and manganese. Deposits of uranium are reported.

Forests, covering much of the area except Java, yield such products as timber, rattan, bamboo, gum, wild rubber, gutta-percha and quinine. Most valuable timber is teak, found mostly in east Java. Ebony, sandalwood and ironwood also are cut.

The climate throughout the group is equatorial and monsoonal, with little variation of temperature (yearly average about 80°; at Batavia, 79°) and rainfall averaging over 100 inches a year. In Sumatra and Java the hot and rainy season usually lasts from May to October; December and January are relatively cool and dry; February, March and April, hot and dry.

Iran (Kingdom)

Area: 636,293 square miles.

Population (est. 1955)*: 21,146,000 (Iranian, Kurdish, Azerbaijani).

Density per square mile: 33.2.

Ruler: Mohammed Riza Pahlavi.

Premier: Manouchehr Eghbal.

Principal cities (est. 1950): Teheran, 618,976 (capital); Tabriz, 279,168 (manufacturing center); Isfahan, 196,134 (cotton, tobacco); Meshed, 191,794 (Moslem shrine); Hamadan, 123,931 (western trading center).

Monetary unit: Rial.

Languages: Iranian (Persian), Kurdish, Azerbaijani.

Religions: Moslem (Shiah), about 90%; Moslem (Sunni), about 5%; Armenian; Jewish; Nestorian; Parsi.

* U.N. estimate; no census ever taken.

HISTORY. Oil-rich Iran, roughly one-fifth the size of the United States, was called Persia before 1935. Its key location blocks the lower land gate to Asia, and also stands in the way of traditional Russian ambitions for access to the Indian Ocean. In modern times, Iran has drawn Big Power interest because of its especially rich oil deposits.

Iran's history is a long one of rising and falling dynasties. After periods of Assyrian, Median and Achaemenid rule, Persia became a powerful empire under Cyrus the Great, reaching from the Indus to the Nile at its zenith in 525 B.C. It fell to Alexander in 331-30 B.C., to the Selucidae in 312-02 B.C., and to the Parthians about 130 B.C. A native Persian regime arose about A.D. 224, was weakened fighting the Turks, and fell to the Arabs in 637. In the 12th century the Mongols took their turn ruling Persia, and in the early 18th century the Turks and Russians occupied it. In modern times, Russia, Turkey, Britain, France and

most recently, the United States all have taken keen competitive interest in Iran.

An Anglo-Russian convention of 1907 divided Iran into two spheres of influence. British attempts to impose a protectorate over all of Iran were defeated in 1919. On Feb. 26, 1921, General Riza Pahlavi seized the government and was elected hereditary Shah in 1925. Subsequently he did much to modernize the country and abolished all foreign extraterritorial rights.

Increased pro-Axis activity led to Anglo-Russian occupation of Iran in August 1941 and deposition of the Shah in favor of his son, Mohammed Riza Pahlavi.

In November 1945, a Soviet-inspired autonomist movement won control of Azerbaijan, Iran's northwest province. To protect their advantage, the Russians kept troops in that area past the treaty evacuation date of March 2, 1946. The Iranians promptly protested this breach of agreement to the United Nations. The Russians evacuated their troops on May 6.

All Razmara became Premier June 26, 1950, and pledged to restore efficient and honest government, but he was assassinated Mar. 7, 1951. Mohammed Mossadegh took over April 29. The next day, Parliament completed action on a bill nationalizing the oil industry. The action was taken over strong British protests, but Britain evacuated the oil refineries Oct. 3, 1951. Subsequent British-Iranian negotiations failed. Loss of oil revenue placed Iran in a precarious economic position.

Mossadegh was ousted Aug. 19, 1953, in a *coup d'état* led by Fazollah Zahedi, whom the Shah had named Premier. The oil dispute was settled in Aug. 1954. Hussein Ala succeeded Zahedi as Premier on Apr. 7, 1955; Ala was succeeded by Manouchehr Eghbal April 3, 1957.

GOVERNMENT AND DEFENSE. Iran is a constitutional monarchy, and the Shah has the usual powers of the head of a parliamentary state. Executive power is exercised by a Cabinet headed by the Prime Minister, who is appointed by the Shah and is responsible to Parliament, the lower house of which (Majlis) has 136 popularly elected members and the upper house of which (Senate) has 60 members, half of whom are appointed by the Shah.

Military service is compulsory; the initial training period is 2 years. The army, modernized and reorganized by Riza Pahlavi, father of the present Shah, consists of about 130,000 men. The air force has several hundred planes, and the navy several small craft in the Persian Gulf. There is also a U. S.-trained police force numbering 20,000.

SOCIAL AND ECONOMIC CONDITIONS. Education has made good progress in the

20th century, supplanting the old and essentially religious system. In 1953-54 there were 5,959 primary schools with 790,200 pupils; secondary schools (411 in 1952) had 119,300 students in 1953-54. There are universities at Teheran and Tabriz. Illiteracy is high.

Iran is predominantly agricultural. Large estates are numerous, and irrigation is common, especially on the central plateau. The principal crops are wheat (est. 1956: 2,700,000 metric tons) and barley (880,000 tons). Rice production, confined largely to the Caspian provinces, was estimated at 440,000 tons (paddy) in 1956.

Other crops include grapes, dates, apricots, tobacco, tea, cotton, sugar beets and corn. There are extensive grazing lands. Wool production in 1956 was estimated at 10,000 metric tons (clean); in 1955 there were an estimated 21,650,000 sheep.

Iran must still import many manufactured necessities, but several new factories were established by the government after 1925, including sugar plants, rice and oil mills, textile factories, a cement factory, copper smelter, glycerine factory and small arms factory. Both sugar and tobacco are government monopolies. The manufacture of carpets, for which Iran is famous, is a valuable industry.

Foreign-trade data (trade years beginning March 21) in millions of U. S. dollars:

	1951-52	1952-53	1953-54
Exports	288.2	73.9	93.7
Imports	176.5	117.1	176.0

In 1953-54 the leading customers were the U. S. and Canada (23%), Germany (21%), and other continental European Payments Union countries (16%); leading suppliers, Germany (21%), other continental EPU countries (25%) and the U. S. and Canada (18%). The principal exports in 1952-53 were cotton (17%) and rugs (16%).

In 1953 there were about 44,000 miles of roads and in 1954 about 1,600 miles of railway, with more under construction.

The budget for 1956-57 forecast revenue at 15,800,000,000 rials and expenditure at 19,800,000,000 rials.

NATURAL FEATURES AND RESOURCES; CLIMATE. Iran is, in general, a plateau averaging 4,000 feet elevation. In addition, there are maritime lowlands along the Persian Gulf and the Caspian Sea. The Elburz Mountains in the north rise to 18,603 feet at Mt. Demavend. From northwest to southeast, the country is crossed by a desert 800 miles long.

Considerable mineral wealth exists, but only oil is exploited commercially. The principal field, near Shushar in the southwest, was worked until 1951 by the Anglo-Iranian Oil Company. The latter's conces-

sion began in 1901 and was to run until 1993, but its properties were nationalized by the Iranian government in April, 1951. Production under Iranian control was negligible. Under an agreement signed Sept. 19, 1954, Iran's oil is being produced, refined and marketed by a consortium of 8 western oil companies, with 50% of the profits going to Iran. The consortium began production Oct. 29, 1954, and during 1956 produced 25,934,000 long tons (about 197,600,000 barrels). Income to the Iranian government exceeded £54,300,000.

Deposits of uranium have been reported in Iran.

The main forest belt on the northern Elburz slope supplies railroad ties, charcoal and firewood. Gums are the most valuable forest product. Fisheries are worked in the Persian Gulf and the Caspian Sea.

The central plateau is hot in summer and very cold in winter, but the Caspian area has a sub-tropical climate. Mean temperatures vary at Teheran from 35° in January to 85° in July (yearly average 62°); at Bushire, on the Persian Gulf, from 58° in January to 90° in July and August. Rainfall is light and variable (4 to 20 inches or more annually at Teheran).

Iraq (Kingdom)

Area: 171,599 square miles.*

Population (est. 1955): 5,200,000 (Arab, 75%; Kurdish, 15%; Iranian, 3.75%; others, 6.25%).

Density per square mile: 30.3.

Ruler: King Faisal II.

Premier: Ali Jawdat.

Principal cities (census 1947, cities proper): Baghdad, 364,049 (capital); Mosul, 203,273 (oil); Karbala, 122,719 (religious center); Basra, 94,000 (chief port).

Monetary unit: Dinar.

Languages: Arabic, Kurdish.

Religions (census 1947): Moslem, 93.6%; Christian, 3.1%; Jewish, 2.5%; others, 8.3%.

* Includes desert area of 80,583 square miles.

HISTORY. Iraq, a triangle of mountains, desert and fertile river valley less than half the size of Texas, is bounded east by Iran, north by Turkey, west by Syria and Jordan, and south by Saudi Arabia. From earliest times it has been known as Mesopotamia—the land between the rivers—for it embraces a large part of the alluvial plains of the Tigris and Euphrates.

An advanced civilization existed in Mesopotamia by 4000 B.C. Sometime after 2000 B.C. it became the center of the ancient Babylonian and Assyrian empires. It was conquered by Cyrus the Great of Persia in 538 B.C., and by Alexander in 331 B.C. After an Arab conquest in A.D. 637-40, Baghdad became capital of the ruling caliphate. The country was cruelly pillaged by the Mon-

gols in 1253, and during the 16th, 17th and 18th centuries was the object of repeated Turkish-Persian competition.

Nominal Turkish suzerainty imposed in 1638 was replaced by direct Turkish rule in 1831. In World War I an Anglo-Indian force occupied most of the country, and Britain was given a mandate over the area in 1920. The British recognized Iraq as a kingdom in 1922 and terminated the mandate in 1932, when Iraq was admitted to the League of Nations. In World War II, Iraq generally adhered to its 1930 treaty of alliance with Britain, but in 1941 British troops were compelled to put down a pro-Axis revolt led by Prime Minister Rashid Ali. Iraq became a charter member of the Arab League in March 1945, and Iraqi troops took part in the Arab invasion of Palestine in 1948. The 1930 treaty of alliance with Britain was terminated in April 1955 and replaced by a defense co-operation agreement.

King Faisal II, born on May 2, 1935, succeeded his father, Ghazi I, who was killed in an automobile accident on April 4, 1939. The King's uncle, Abdul-Ilah, is heir apparent.

GOVERNMENT AND DEFENSE. Under the 1924-25 Constitution, Iraq is a hereditary monarchy with a two-house Parliament. The Senate is named by the King for a term of eight years; the 138-member Chamber of Deputies is elected popularly for four years. Executive power is vested in a Council of Ministers, headed by the Prime Minister, who is appointed by the King.

Military service is compulsory, with an initial training period of 1½ to 2 years. The army numbers about 60,000.

SOCIAL AND ECONOMIC CONDITIONS. Primary education is free and nominally compulsory. Secondary education is neither free nor compulsory. There are no universities. In 1955 there were 1,825 elementary schools with 353,227 pupils and 203 secondary schools with 57,250 students; 15 institutions of higher learning had a combined enrollment of 5,445.

The chief economic activity is agriculture, dependent upon irrigation and confined to the valleys of the Tigris and Euphrates. Iraq supplies about 80 per cent of the world's dates (1956: 335,000 short tons). Chief among the cereal products of Iraq are barley (1956: 1,016,000 metric tons), wheat (776,000 tons), rice, sorghum, maize and millet. Many fruits and some tobacco and cotton are grown. Grazing is the principal occupation of the many nomadic and seminomadic tribes. Livestock estimates included (1953-54) 10,000,000 sheep, 1,510,000 cattle, 718,000 buffalo,

(1953) 2,000,000 goats, 300,000 camels. Wool production in 1956 was about 8,000 metric tons (clean basis).

Industry is still embryonic. Of some 100 firms, the most important are those making brick, tile, woolen textiles, vegetable oils, soap, glass and cigarettes.

Recent foreign-trade data are as follows (in millions of dinars):

	1954	1955	1956
Exports*	174.5	185.4	170.6
Imports	72.8	97.2	114.6

* Adjusted to include estimated value of crude petroleum exports.

Chief exports in 1956 were petroleum (92%), barley (3%) and dates (1%). Leading suppliers in 1955 were Britain (28%), the U. S. (15%) and Japan (8%); leading customers, France (23%), Italy (19%) and Britain (12%).

The only port for seagoing vessels is that of Basra, located on the Shatt al-Arab River near the head of the Persian Gulf. There are about 12,000 miles of roads. Iraq State Railways, the only rail line of the country, operates three lines totaling 1,055 miles of main line.

NATURAL FEATURES AND RESOURCES; CLIMATE. Iraq has arid desertland west of the Euphrates, a broad central valley between the Euphrates and Tigris, and mountains in the northeast. The fertile lower valley is formed by the delta of the two rivers, which join about 120 miles from the head of the Persian Gulf. The gulf coast line is 26 miles.

Oil production is concentrated at the Baba Gurgur fields near Kirkuk, which are operated on behalf of an international group by the British-managed Iraq Petroleum Company (production 1956: 21,086,155 long tons). Associated companies operate fields at Zubair and Rumaila near Basra (1956: 8,438,969 tons) and at Ain Zalah and Butmah (1956: 1,077,954 tons). The Khanaqin Oil Company, a British Petroleum subsidiary, operates another field which produces only for local consumption (1955: about 360,000 long tons).

Oil is piped to Tripoli in Lebanon, Banias in Syria, Fao on the Persian Gulf and Haifa in Israel (suspended in 1948). The Iraqi government received \$206,500,000 in oil revenues in 1955.

Iraq's climate, generally, runs to great extremes—long hot summers and short cold winters. The area on the Persian Gulf is one of the hottest places in the world. Average temperature at Baghdad is 49° in January and 92° in July and August. The rainfall there is only about 7 inches annually.

Ireland (Republic)

Area: 26,601 square miles (not including larger water bodies).*

Population (census 1956)†: 2,894,822 (almost entirely Irish).

Density per square mile: 108.8.

President: Séan T. O'Kelly.

Prime Minister: Éamon de Valera.

Principal cities (census 1956)†: Dublin (Baile Átha Cliath), 537,878 (capital); Cork, 79,945 (seaport); Limerick (Luimneach), 50,869 (seaport); Dun Laoghaire (Kingstown), 47,335 (seaport).

Monetary unit: Irish pound.

Languages: Gaelic, English.

Religions (census 1946): Roman Catholic, 94.3%; Protestant Episcopal, 4.2%; Presbyterian, .8%; others, .7%.

* Total area: 27,136 square miles. † Preliminary figures.

HISTORY. About the beginning of the Christian Era, Ireland was divided into five kingdoms, each with its own ruler, but each subject to the overlord of all Ireland who dwelt at Tara. St. Patrick introduced Christianity in A.D. 432.

Norse depredations along the coasts, starting in 795, ended in 1014 with Norse defeat at the Battle of Clontarf by forces under Brian. In the middle of the 12th century, the Pope gave all Ireland to the English Crown as a papal fief. In 1171 Henry II of England was acknowledged "Lord of Ireland," but local sectional rule continued for centuries, and English control over the whole island was not reasonably absolute until the 17th century. By the Act of Union (1800), England and Ireland became the "United Kingdom of Great Britain and Ireland."

The great potato famine of 1846-48 took many lives and drove millions to emigrate to America.

Several home-rule bills were introduced in the English Parliament in the 19th century, but failed of passage. One was finally approved in 1914, but enforcement was suspended by the outbreak of World War I. During the war, agitation for freedom was carried on by the nationalist party, which was called Sinn Féin (Our-selves). In 1916 the British quickly suppressed the famous Easter Rebellion and executed its leaders.

After the 1918 elections, seventy-three of the Sinn Féiners elected to the English Parliament met in Dublin, proclaimed themselves an Irish Parliament, and passed a declaration of independence. The result was war between Irish nationalists and British troops from January 1919 to May 1921. A treaty ratified in December 1921 gave Ireland political status equal to that of Canada. Six Ulster counties, largely Protestant, formed a separate government as Northern Ireland, closely bound to England; the other twenty-six became the

Irish Free State. Republican extremists, headed by Éamon de Valera, refused for several years to recognize the treaty.

William Cosgrave, leader of the Sinn Féin's right wing, was President from 1922 to 1932. In the latter year, De Valera's party, Fianna Fáil, won control of the government. Under De Valera's leadership a new Constitution was adopted in 1937 making the nation, Ireland, in effect a republic.

Dr. Douglas Hyde, elected without opposition as the first President in 1938, was succeeded in 1945 by Séan T. O'Kelly, the Fianna Fáil nominee (re-elected in 1952). The country maintained strict neutrality during World War II.

De Valera's tenure as Prime Minister came to a temporary end in 1948, when the Fianna Fáil lost its absolute majority in the parliamentary elections. John A. Costello, a Fine Gael moderate, took office at the head of a six-party coalition Cabinet on Feb. 18, 1948. The last links with the British Crown were severed at midnight Apr. 17, 1949. Costello yielded to De Valera on June 18, 1951, after new elections but again took office June 2, 1954. De Valera returned, however, on Mar. 20, 1957.

GOVERNMENT AND DEFENSE. Ireland is a sovereign, independent republic. The President, directly elected for seven years, names the Prime Minister on the nomination of the Chamber of Deputies. Parliament (Oireachtas) has two houses. The Chamber of Deputies (Dáil Éireann) has 147 members elected by proportional representation for a five-year term. The Senate (Seanad Éireann) has 60 members, of whom 11 are named by the Prime Minister, 6 by the universities, and 43 from vocational panels. Its powers, however, are limited.

Party representation in the Dáil Éireann after the elections of Mar. 5, 1957, was as follows: Fianna Fáil, 78; Fine Gael, 40; Labour, 12; Farmers, 3; Clann Na Poblaigh, 1; Independents, 9.

Military service is voluntary. The army has a permanent authorized strength of 12,500. In 1938 Britain gave up its last defense posts in the republic, including those located at Cobh, Berehaven and Lough Swilly.

SOCIAL AND ECONOMIC CONDITIONS. Elementary education is free and is provided in state schools; secondary education is under private control, notably the religious orders. Technical and agricultural education is under local control, aided by state subsidies. Illiteracy is negligible. The 4,874 elementary schools had 472,536 pupils in 1954; 458 secondary schools had 56,411 in 1954-55. The University of Dublin (Trinity College), founded in 1591, had an enrollment of 1,932 in 1954-55, and the

National University of Ireland (constituent colleges at Cork, Galway, Dublin and Maynooth) had 6,406.

The majority of the people are English-speaking, although the government has attempted to promote the traditional Gaelic language, which is an essential part of the curriculum for all state schools.

Ireland is predominantly an agricultural country, with about 70 per cent of the total land area (17,000,000 acres) devoted to crops and pasture. The pastoral industry is the basis of the nation's economy, but recent years have brought a greater diversity in agriculture, marked by large increases in sugar beet and wheat production. Principal crops in 1956 were wheat, 426,000 long tons; oats, 536,000 tons; potatoes, 2,607,000 tons; sugar beets, 630,000 tons. Other staple crops are rye, flax, turnips, cabbage and hay. Livestock in June 1956 included 4,536,500 cattle, 3,439,300 sheep and 747,100 hogs. Wool output in 1956 was 17,958,574 lb. (greasy); butter, 1,264,971 cwt.

Leading manufactures are ordinarily beverages, tobacco, wood, paper, clothing, textiles and metals. The hydroelectric plant erected on the Shannon River in County Limerick provides cheap electricity for homes and factories.

Trade statistics are as follows (in millions of Irish pounds):

	1954	1955	1956
Exports	115.1	110.3	107.4
Imports	179.9	204.3	180.9

The United Kingdom (including Northern Ireland) was the leading customer in 1956 (81%). The United Kingdom was also the chief supplier (57%), followed by the U. S. (8%) and western Germany (4%). Major exports were live animals (42%), beef and veal (6%), beer (5%) and chocolate crumb (5%). Major imports were oils, fats, resins and gums, textiles, machinery and vehicles.

Railway mileage is about 2,400. The highway system totaled 48,800 miles in 1954. Shannon is an important international airport. There are 670 miles of canals and navigable waterways.

Recent finance data are as follows (in millions of Irish pounds):

	1955-56	1956-57	1957-58*
Revenue	111.7	113.4	120.0
Expenditure	112.0	119.3	120.0

* Budget estimate.

The public debt on March 31, 1957, was £385,000,000; state assets amounted to £213,000,000.

NATURAL FEATURES AND RESOURCES;
CLIMATE. Occupying the entire island except for the six northern counties of Ulster, Ireland resembles a basin—a central plain

rimmed with mountains, except in the Dublin region. The mountains are low, with the highest peak, Carrantuohill located in Kerry County, rising to a height of 3,415 feet.

The principal river is the Shannon, which begins in the north central area, flows south and southwest for about 240 miles and empties into the Atlantic. About 20 per cent of the country is covered by bogs. Among the many lakes are the famous Lakes of Killarney in the southwest county of Kerry.

In 1956 Ireland mined 197,421 long tons of coal, some gypsum, and considerable peat from its bogs, but otherwise the mineral resources are negligible, as are those of the forests. The fishing industry employs about 10,000 men. The 1956 wet-fish catch, including mackerel, herring, whiting, cod and plaice, came to a total of 364,757 cwt. valued at £754,277 (preliminary).

A moist and mild climate, with annual rainfall running between thirty and forty inches fairly evenly distributed throughout the year, is influenced by the Gulf Stream, which makes the winters warmer than in other places in the same latitude. The mean temperature at Dublin is 41.7° in January and 60.5° in July.

Israel (Republic)

Area: 7,984 square miles.

Population (est. Dec. 31, 1956): 1,872,390 (1953: Jewish, 88.9%; Moslem, 7.6%; Christian, 2.5%; others, 1.0%).

Density per square mile: 234.5.

President: Itzhak Ben-Zvi.

Premier: David Ben-Gurion.

Principal cities (est. Dec. 31, 1956): Tel Aviv-Jaffa, 371,000 (industrial center); Haifa, 160,000 (chief port); Jerusalem (Israeli sector), 149,440 (capital).

Monetary unit: Israeli pound (£I).

HISTORY. The history of Palestine, cradle of two of the great religions of the world, and homeland of the modern state of Israel, is mostly a chronicle of invasion, conquest and confusing divisions. To the ancient Hebrews it was known as the "Land of Canaan"; the name Palestine is derived from that part of the country inhabited by the Philistines of Biblical times. About 1000 B.C. the Hebrews succeeded in establishing a single monarchy, which later split up into two kingdoms—Judah and Israel. The country was subsequently invaded and overcome by many peoples, including the Assyrians, Babylonians, Egyptians, Persians, Macedonians, Romans and Byzantines. In A.D. 634-36, Palestine was wrested from the Byzantine Empire by the Arabs. Frankish Crusaders captured Jerusalem in 1099 and set up a feudal kingdom which endured until the defeat of the

Franks by Saladin (1187) and the restoration of Moslem rule. In 1516 suzerainty over the area was transferred from the Mamelukes of Egypt to the Turks. It remained part of the Ottoman Empire until World War I, when British forces under General Allenby defeated the Turks and captured Jerusalem (Dec. 9, 1917). The League of Nations mandate awarded to Great Britain was put in force on Sept. 29, 1923.

Meanwhile, a movement had been founded in 1897 by Theodor Herzl to create a Jewish homeland in Palestine, and a considerable number of Jewish immigrants had entered the country prior to World War I. On Nov. 2, 1917, official British recognition was given both to the growing Arab nationalist movement and to the Zionist aspirations by the issuance of the so-called Balfour Declaration.

The declaration was attacked by the Arabs. Throughout the period between the two World Wars, outbreaks of violence and open revolt occurred. Jewish immigration continued, especially after the rise of Hitler. A British royal commission report approved by the British government July 7, 1937, recommended the partition of Palestine into an Arab and a Jewish state separated by a mandated area in the vicinity of Jerusalem and at Nazareth. The Arabs opposed the proposal, advocating instead the establishment of an independent Palestine with full minority rights for the Jews. In May 1939, the British government issued a White Paper declaring the establishment of a Jewish state contrary to British obligations to the Arabs and promising, after a transitory period of ten years, the establishment of an independent Palestine in which Arabs and Jews would share authority in government. During the next five years, 75,000 Jews were to be allowed to enter Palestine. These proposals did not satisfy either party, and the League Mandates Commission questioned their validity, but the outbreak of World War II overshadowed all other issues.

Arab-Jewish co-operation in the war effort introduced a period of order, but the end of European hostilities in 1945 brought a renewal of friction, and the formation of the Arab League in that year served to demarcate lines of opposition. Attempts to bring Jewish immigrants into Palestine illegally were intensified thereafter, and terrorism grew apace.

Termination of the British mandate May 14, 1948, and withdrawal of British forces brought new violence. An independent state of Israel was immediately proclaimed by the Jewish National Council, and Arab forces converged on Palestine from the south, north and east, spearheaded by the crack British-trained Arab Legion of King

Abdullah of Jordan. Within a few hours Arab-Jewish hostilities were in full swing. On June 11, however, there went into effect a four-week truce supervised by Count Folke Bernadotte, Swedish U. N. mediator in Palestine. Fighting resumed on July 9, with Israeli forces gaining on all fronts except in Jerusalem, part of which had been taken by Jordan troops prior to the truce. On July 17 a second truce was effected on order of the U. N. Security Council. Bernadotte was assassinated on Sept. 17 by unidentified Jewish terrorists and his duties were taken over by Dr. Ralph Bunche of the United States. A final cease-fire took effect on Jan. 7, 1949, and an armistice agreement was concluded with Egypt on Feb. 24 and with Jordan on April 3.

During the hostilities Israel lost none of the territory allotted to it under the partition plan and increased that territory by about 50% by gaining western Galilee, a broad corridor to Jerusalem through central Palestine and part of modern Jerusalem. In April 1950, Jordan incorporated eastern and central Palestine, including the Old City of Jerusalem.

Israel's governmental structure took shape rapidly. Elections were held in Jan. 1949 for a constituent assembly, which adopted a Constitution on Feb. 14; the provisional leaders, Chaim Weizmann and David Ben-Gurion were confirmed as President and Premier, respectively. Recognized by most non-Arab countries, the new nation was admitted to the U. N. on May 11, 1949, but Israeli-Arab relations remained hostile, with frequent border incidents.

Despite many Cabinet crises, Ben-Gurion's government met with increasing success the problems arising out of an unfavorable trade balance, large numbers of immigrants and the urgent need for foreign capital investment and additional industries.

Dr. Weizmann died Nov. 9, 1952, and Itzhak Ben-Zvi was elected to succeed him as President on Dec. 8. Ben-Gurion resigned for reasons of health on Dec. 7, 1953, but took over again on Nov. 3, 1955, from Moshe Sharett, who had succeeded him.

Israeli troops invaded Egypt on Oct. 29, 1956, and quickly took the Gaza strip and almost all the Sinai peninsula up to the Suez canal. Following U. N. intervention they were gradually withdrawn.

GOVERNMENT. The Israeli Constitution adopted by the Constituent Assembly in 1949, provides a republican form of government headed by a President elected for a 5-year term by the Chamber of Deputies. Legislative power is vested in the Chamber of Deputies, the members of which are elected by the vote of all citizens who have reached the age of 21. The government is administered by the Cabinet,

which is headed by the Premier and is responsible to the Chamber of Deputies.

Elections held July 26, 1955, divided the 120 seats in the Chamber of Deputies (Knesset) as follows: Mapai (Labor), 40; Herut, 15; General Zionist (rightist), 13; National Religion Front, 11; Achdut Avoda (Marxist), 10; Mapam, 9; Communists, 6; others, 16.

The Constitution characterizes Israel as the national home of the Jewish people and directs the admission of every Jew who desires to settle within its borders, subject to control of the Chamber of Deputies. Between May 1948 and Dec. 31, 1956, 830,000 Jewish immigrants entered Israel; the peak year was 1949 (239,141).

Military service is compulsory. The army had 50,000 men on active duty in 1956 with 200,000 in ready reserve. The navy on Dec. 31, 1956, had 2 destroyers, 3 frigates and escort vessels and several other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Education is under the supervision of the Ministry of Education. Kindergarten and elementary education is free; most secondary schools are semiprivate. In 1954-55 there were 929 elementary schools with 232,205 pupils and 79 secondary schools with 22,400 pupils. The Hebrew university in Jerusalem had 3,150 students in 1955.

Agriculture is the chief economic activity. The maritime plain, the plain of Esdraelon and the northern Jordan valley are the principal agricultural areas. Citrus growing, confined largely to the maritime plain, normally furnishes the major export crop. Production (1955-56) was 452,000 metric tons. Others include olives, rice, fruits and vegetables, figs, tobacco, wheat, barley, corn, sesame and potatoes. There are many collective rural settlements.

Industry is developing rapidly, especially the food-processing, textile, metalworking and chemical groups. Diamond cutting, although dependent on rough diamond imports, is of major importance; and there are oil refineries and storage tanks at Haifa, a terminus of the pipeline from the Iraqi oil fields (suspended since 1948).

Recent foreign-trade statistics are as follows (in millions of Israeli pounds):

	1954*	1955*	1956*
Exports	132.5	162.4	193.0
Imports	438.8	585.0	655.2

* Calculated at the rate to £1 1.80 = U.S. \$1.00.

Chief exports in 1956 were citrus fruits (41%) and polished diamonds (23%). Leading customers were Britain (21%), the U. S. (17%) and Belgium (6%); leading suppliers, the U. S. (31%), western Germany (18%) and Britain (10%). Leading imports were wheat (7%), rough diamonds (6%) and iron and steel bars (3%).

Internal communication is provided by 393 miles of railway (in operation, 1957) and a good highway network totaling 1,760 miles (1957). The excellent airport at Lydda, near Tel Aviv, is served by major international lines and El Al, Israel's international line, which flew 2,681,365 miles and carried 34,462 passengers in 1955. The merchant marine had 43 vessels (100 tons and over) aggregating 148,273 gross tons on June 30, 1956.

Israel has been heavily dependent on international loans. Recent public finance data are as follows (in millions of Israeli pounds):

	1955-56	1956-57*	1957-58*
Revenue†	775.4	769.3	969.0
Expenditure	778.3	769.3	969.0

* Budget estimate. † Includes proceeds of loans and counterpart funds.

On Dec. 31, 1956, the foreign debt was £1373,145,000 and the internal debt, £1411,830,000.

NATURAL FEATURES AND RESOURCES; CLIMATE. Northern Israel is largely a plateau traversed from north to south by mountains and broken by great depressions, also running from north to south.

The maritime plain of Israel is remarkably fertile, but the southern Negev region, which comprises almost half the total area, is largely a wide desert steppe area. The Jordan, the only important river, rises in Syria and flows along the Jordan border through the Hule marshes and lake and the Sea of Tiberias (Galilee) into Jordani Palestine and thence into the Dead Sea, 1,290 feet below sea level.

Mineral resources are limited. They include gypsum, sulfur, limestone, and rock salt, together with potash and bromine from the Dead Sea.

Summers are hot and dry, with occasional maximum temperature of 100°. The mean annual temperature at Jerusalem is 62.8°. Rainfall occurs chiefly in the autumn and spring; the mean annual average is 28 inches along the coast and 26 inches in Jerusalem.

Italy (Republic)

(Repubblica Italiana)

Area: 116,316 square miles.
Population (est. Dec. 1, 1956): 48,324,000* (predominantly Italian).
Density per square mile: 415.5.*
President: Giovanni Gronchi.
Premier: Adone Zoli.
Principal cities (census 1951): Rome, 1,606,739 (capital); Milan, 1,264,402 (leading financial, industrial center); Naples, 1,003,815 (seaport); Turin, 711,492 (auto works); Genoa, 678,200 (seaport); Palermo, 482,594 (Sicilian seaport).

Monetary unit: Lira.
Religions: Roman Catholic, 99.6%; others (Protestant, Orthodox, Jewish), .4%.

* Population present.

HISTORY. Modern Italy did not exist as a unified country until 1870. Until A.D. 476, when the German Odoacer became head of the Roman Empire in the west, the history of Italy was largely the history of Rome. From A.D. 800 on, the Holy Roman Emperors, the Popes, Normans, Lombards and Saracens all vied for control over various segments of the Italian peninsula. Numerous city states, such as Venice and Genoa, and many small principalities flourished in the late Middle Ages.

In 1713, after the War of the Spanish Succession, Milan, Naples and Sardinia were handed over to Austria, but the Hapsburg influence on the peninsula was interrupted for a short time after 1800 when Italy was unified by Napoleon, who crowned himself King of Italy on May 26, 1805. After the Congress of Vienna in 1815, Austria continued to be the dominant power in Italy.

The movement for national unity began in the middle 19th century, staged by the "Young Italy" group headed by Giuseppe Mazzini. In 1858 Count Cavour, Prime Minister under King Victor Emmanuel II of Sardinia, secured the aid of Napoleon III of France in unifying Italy. After French and Sardinian forces had defeated the Austrians in 1859, Lombardy was annexed to Sardinia, and by the time the first Italian Parliament opened at Turin in Feb. 1861, all Italy was represented except Venetia, held by Austria, and Rome, which was the territory of the Pope. On February 18, 1861, Victor Emmanuel II was proclaimed King of united Italy.

In 1866 Italy sided with Prussia against Austria and received Venetia; Rome was seized in 1870. In 1882 the young nation entered into the Triple Alliance with Austria and Germany. After war with Turkey in 1911-12, the Italians were awarded Tripoli in North Africa and the Dodecanese islands in the Aegean Sea.

Italy denounced the Triple Alliance on May 3, 1915, and declared war on Austria on May 24. By the treaty of St. Germain, on Sept. 10, 1919, the south Tirol (Upper Adige) and the Istrian peninsula were awarded to Italy.

In the years immediately following World War I, Italy was a virtual battleground between the Socialists and Benito Mussolini's new Fascist movement. The weak government was powerless to maintain order as the two sides fought for power. Finally, on Oct. 30, 1922, the Fascists staged their "March on Rome" and took over the government. Mussolini was named Premier by King Victor Emmanuel III. He Duce and his Fascist Grand Council

soon made Italy into a corporate state, with himself as dictator.

In 1935-36 Italy successfully invaded, conquered and annexed Ethiopia, despite the complaints of the League of Nations and economic sanctions.

On November 6, 1937, Italy joined the German-Japanese anti-Comintern pact and on December 11 withdrew from the League of Nations. The Rome-Berlin Axis was converted into a full military alliance on May 22, 1939. Meanwhile, Italian troops had seized Albania in April, 1939.

On June 10, 1940, Mussolini suddenly announced Italy's declaration of war against France (already in the throes of defeat) and Britain. Italian troops were able to advance only a few miles into France before the armistice was concluded on June 24, under which Italy annexed a small strip of France. On October 28, 1940, Italian forces invaded Greece from Albania, but were driven back by the Greeks, who held a third of Albania by the time the Germans launched their Balkan campaign on April 6, 1941. Italy subsequently occupied parts of Yugoslavia and Greece. Following the German capitulation in North Africa and the fall of Sicily, Mussolini was ousted on July 25, 1943, and Marshal Pietro Badoglio formed a new government. On September 3, 1943, the date of the invasion of the Italian mainland by Allied forces, a military armistice was signed between Eisenhower and Badoglio.

On June 9, 1944, five days after the Allies entered Rome, Badoglio was succeeded as Premier by Ivanoe Bonomi, a Socialist, who formed a coalition Cabinet. The government was recognized by the Allies as the *de facto* government of Italy on October 25, but only as a cobelligerent, not as an ally.

Upon the collapse of German resistance in the north, Mussolini was tracked down and put to death by partisan forces on April 28, 1945. On December 10, Alcide de Gasperi, a Christian Democrat, took over from Ferruccio Parri, who had succeeded Bonomi as Premier in June.

On June 2, 1946, the Italian people voted in favor of a republic, and King Humbert II, who had succeeded his father on May 9, went into exile.

The new Constitution drafted by the constituent assembly took effect on Jan. 1, 1948. Following the Communist defeat in the election of April 1948, De Gasperi formed another coalition Cabinet from which the Communist and left-wing Socialist bloc was again excluded. Luigi Einaudi, veteran Liberal leader, was elected first President of the Republic on May 11. In April 1949, Italy adhered to the North Atlantic pact.

De Gasperi's centrist coalition lost ground to both leftist and rightist groups in parliamentary elections held June 7-8, 1953. He gave way on Aug. 17 to Giuseppe Pella, who formed an all Christian Democrat Cabinet. Pella was succeeded by coalition cabinets headed by Mario Scelba (Feb. 10, 1954), Antonio Segni (July 6, 1955) and Adone Zoli (May 19, 1957). Meanwhile, on Apr. 29, 1955, Giovanni Gronchi, a liberal Christian Democrat, had been elected to succeed Luigi Einaudi as President.

GOVERNMENT. Under the 1947 Constitution Italy is a "democratic republic founded on labor." The President is elected for seven years by Parliament in joint session with regional delegates. The Cabinet, headed by the Premier and nominated by the President, must enjoy the confidence of Parliament, which is composed of the Chamber of Deputies, popularly elected for a five-year term, and the Senate. All citizens are duty-bound to vote.

The Chamber of Deputies elected on June 7-8, 1953, had 590 members, of whom 261 were Christian Democrat, 143 Communist, 75 leftwing Socialist, 40 monarchist, 29 Social Movement (neo-Fascist) and 42 members of other parties. The Senate has 242 members.

PEACE TREATY OF 1947. The peace treaty which took effect Sept. 15, 1947, required Italian renunciation of all claims in Ethiopia and Greece, the cession of the Dodecanese to Greece, and of five small Alpine areas to France. In addition, the major part of the Istrian peninsula, including Fiume and Pola, went to Yugoslavia. The Free Territory of Trieste was carved out of the area to the west of the new Yugoslav frontier.

Italy was to pay reparations of \$100,000,000 in kind over a seven-year period to the Soviet Union, \$125,000,000 to Yugoslavia, \$105,000,000 to Greece, \$25,000,000 to Ethiopia and \$5,000,000 to Albania; also to make two-thirds restitution for war-time damage to Allied property in Italy.

Zone A of Trieste (90 sq. mi.), including the city of Trieste, was transferred to Italy in Oct. 1954 and the remainder to Yugoslavia.

DEFENSE. Most of the defensive restrictions which were imposed by the 1947 treaty were lifted in Dec. 1951 over the objections of the U.S.S.R.

The navy in Dec. 1956 had 2 battleships, 3 cruisers, 7 destroyers, 40 frigates and escort vessels, 5 submarines and many other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Elementary education is free and compulsory from 6 to 14. Elementary schools numbered 41,119 in 1953-54, with 4,554,422 pupils; the 3,275 secondary

schools had 628,680 students. In 1954, 152 institutions of higher learning, including 28 universities, had 211,128 students. Illiteracy is about 10%.

Religion. Although the country is predominantly Roman Catholic, religious freedom is permitted. Catholic religious teaching is given in all elementary and intermediate schools. Relations with the Church are regulated by the treaty with the Holy See of Feb. 11, 1929, which established the temporal power of the Pope over Vatican City.

Agriculture. Agriculture, the most important branch of Italy's economy, engages more than a third of the population. It is extremely diversified; differences of altitude, soil and climate allow the production of all European crops from rye to rice, from apples to oranges, and from hemp to cotton. Approximately 41,050,000 acres are cultivated. Italy ranks next to France in wine production (average 1951-55: 1,299,500,000 U. S. gal.; 1956: 1,580,000,000 gal.) and next to Spain in olive oil production.

Crop data (in thousands of metric tons):

	1954	1955	1956*
Wheat	7,282	9,504	8,681
Rye	115	123	107
Barley	278	292	275
Oats	546	523	506
Maize	2,963	3,204	3,410
Beet sugar	884	1,182	970
Olive oil	286	181	135

* Provisional.

Livestock and dairy farming are important in Italy. Of the 50-odd varieties of Italian cheese, the best known are the hard parmesan and pecorino (the latter made from ewe's milk) and the soft bel paese and gorgonzola. Cheese production in 1955 totaled 348,000 metric tons. In 1954 Italy had 9,033,000 cattle, 9,746,000 sheep and 3,746,000 hogs. Wool production (1956) totaled about 8,000 metric tons (clean basis).

Industry. Industrial production is centered in the north. The nature of the fascist corporate state had a tendency to foster industrial concentration prior to World War II. The textile industry is the largest and most important and supplies the home market as well as furnishing a large proportion of Italy's exports. The metal industries are handicapped by lack of coal, which must be imported in large quantities, and by insufficient iron ore reserves. The chemical, clothing and food industries are also important. Italy is a member of the European Coal and Steel Community.

Production in 1956 included cotton yarn, 153,600 metric tons; woven cotton fabrics, 106,320 tons; rayon yarn, 65,760 tons; pig iron and ferroalloys, 1,995,728 tons; raw

steel, 5,770,364 tons; cement, 10,788,817 tons; automobiles, 279,712; trucks, 36,292.

Trade. Statistics of Italy's foreign trade, in billions of lire, are as follows:

	1954	1955	1956
Exports	1,024	1,160	1,348
Imports	1,524	1,695	1,981

Italy's leading customers by value in 1956 were western Germany (13%), the U. S. (10%), Switzerland (7%) and France (7%). Main suppliers were the U. S. (16%), western Germany (12%), Britain (5%), Iraq (5%) and France (5%). Leading exports were machinery and vehicles, fruits and vegetables, synthetic fibers and manufactures and cotton and manufactures. Leading imports included cotton, coal and coke, wool, grain and petroleum and products.

Communications. According to *Lloyd's Register*, the merchant marine had 1,196 ships (100 tons and over) aggregating 4,196,762 gross tons on June 30, 1956. On Mar. 31, 1957, 84 vessels of 668,660 gross tons were under construction in Italian yards. There are more than 150 seaports, of which the principal are Genoa, Venice, Naples, Leghorn and Trieste. Coastwise traffic is particularly important because of difficult land communications. State railways in 1954 totaled 10,500 miles. Highways totaled about 110,000 miles.

Finance. Data (in billions of lire):

	1954-55*	1955-56*	1956-57†
Revenue	2,311.6	2,509.9	2,671.0
Expenditure	2,618.5	2,809.9	2,990.9

* Provisional. † Budget estimate.

The total internal debt was 4,629,700,-000,000 lire on Nov. 30, 1956.

NATURAL FEATURES AND RESOURCES; **CLIMATE.** Approximately 600 of boot-shaped Italy's 708 miles of length are in the long peninsula that projects into the Mediterranean from the fertile basin of the Po River. The Apennines, branching off from the Alps between Nice and Genoa, form the peninsula's backbone, and rise to a maximum height of 9,560 feet at the Gran Sasso d'Italia (Corno). The Alps are Italy's northern boundary.

Several islands form part of Italy. Sicily, 9,926 square miles, lies off the toe of the boot, across the Strait of Messina, with a steep and rock-bound northern coast and gentler slopes to the sea in the west and south. Mt. Etna, an active volcano, rises to 10,741 feet, and most of Sicily is more than 500 feet in elevation. Sixty-two miles southwest of Sicily lies Pantelleria, 45 square miles, and south of that are Lampedusa and Linosa. Sardinia, 9,301 square miles, just south of Corsica and about 125 miles west of the mainland, is mountainous, stony and unproductive.

Italy has many northern lakes, lying below the snow-covered peaks of the Alps. The largest are Garda (143 sq. mi.), Magglore (83 sq. mi.) and Como (55 sq. mi.). The Po, the principal river, rises in the Alps on Italy's western border and crosses the Lombard plain to the Adriatic.

Natural Resources. Italy is ordinarily the world's largest producer of mercury; it is also an important producer of sulfur. The nation lacks, however, the staple minerals of coal, oil and iron, and is forced to import them. Building stone, particularly marble, is plentiful. Recent production data are as follows (in thousands of metric tons):

	1954	1955	1956
Bauxite	295	326	260
Coal	1,074	1,135	1,077
Lignite	638	418	402
Iron ore	1,093	1,383	1,668
Lead*	37	42	39
Mercury	1,878†	1,845†	2,135†
Petroleum	534‡	1,573‡	4,358‡
Sulfur	227	202	195

* Metal content. † Tons. ‡ Thousands of barrels.

In the south Tirol and in the central Apennines, abundant hydroelectric power resources and deposits of natural gas are being increasingly exploited. In 1956 Italy generated 39,751,559,000 kwh. of electricity, mostly by hydroelectric plants; natural gas production totaled 4,466,401,-000 cu. m.

Forests. Less than 20 per cent of Italy's area is forested. Principal products are soft and hard timber, charcoal and cork. The fishing industry does not fill domestic needs. Coral and sponges are marketed.

Climate. Italy's climate is variable. The Italian Riviera along the Gulf of Genoa is subtropical and highly favored by tourists. The winters in the high Apennines are cold and bitter. The western slope of peninsular Italy is warmer than the eastern side, and the Po basin in the north has cold winters and very hot summers. Sicily has a warm and equable climate. In Rome, December through February are the coldest months (average 47°), July and August the warmest (75°), with abundant sunshine. Rainfall is heaviest in the Alps and lightest in the lowlands (33 inches a year at Rome).

FORMER ITALIAN COLONIAL EMPIRE

Under the 1947 treaty, Italy ceded the Dodecanese to Greece and renounced title to her African possessions, which consisted of Libya, Eritrea and Italian Somaliland. Somaliland (now known as Somalia) remained under Italian administration as a U. N. trust territory.

SOMALIA—Status: U. N. trust territory under Italian administration.

Area: 198,275 square miles.

Population (est. 1954): 1,268,000.

Administrator: Enrico Anzillotti.

Capital: Mogadiscio (population: 74,000).

Foreign trade (1956): exports, 64,981,100 somali* (73% to Italy); imports, 114,879,000 somali (44% from Italy). Chief exports: bananas (59%), hides and skins (12%), cotton (7%).

Agricultural products: dressed skins, cattle, sugar, cotton, cottonseed oil, fruits, bananas (exports 1956: 36,717 metric tons).

Forest products: gum, resin, kapok.

Mineral: tin.

* One somali = 14 cents U.S.

Somalia, a territory extending along Africa's east coast from the Gulf of Aden south to Kenya, fell within the Italian sphere of influence by treaties with the Somali Sultans in 1889 and by agreements with Britain in 1905 and 1924, with the Sultan of Zanzibar in 1905, and with Ethiopia in 1907. After the conquest of Ethiopia in 1936, the area was incorporated into Italian East Africa. It was occupied in Feb. 1941 by British troops.

On Apr. 1, 1950, Somalia became a U. N. trust territory. Administration is in the hands of Italy for 10 years during which it is to be prepared for independence.

The 60 seats in the Legislative Assembly were filled on Feb. 29, 1956, in the first general election ever held in Somalia.

The overwhelming majority of the population are Somalis who belong to the Sunni sect of Islam; they are a pastoral, nomadic people whose livelihood depends on cattle, sheep and camels. However, the Italians (numbering 4,858 in 1954) established plantations in the south, especially in the fertile Juba region. The territory is far from self-supporting, requiring heavy Italian subsidy. The climate is torrid.

Japan (Empire) (Nippon)

Area: 142,801 square miles.

Population (est. July 1, 1956): 90,017,000.

Density per square mile: 630.4.

Ruler: Emperor Hirohito.

Premier: Nobusuke Kishi.

Principal cities (census 1955)*: Tokyo, 6,966,499 (capital; financial, manufacturing center); Osaka, 2,547,321 (chief industrial center); Nagoya, 1,336,779 (machinery, textiles); Kyoto, 1,204,017 (manufacturing); Yokohama, 1,143,287 (seaport); (census 1950) Kobe, 765,435 (seaport, shipbuilding); Fukuoka, 392,649 (seaport, textiles); Sendai, 341,685 (manufacturing, educational center).

Monetary unit: Yen.

Language: Japanese.

Religions (1938): Buddhism, 60%; Shintoism, 21%; Protestant (215,166); Roman Catholic (118,856).

* Preliminary figures.

HISTORY. Japan's early history is inseparable from mythology. A series of legends attributes the creation of Japan to the sun goddess, from whom the later emperors were allegedly descended. The first of them was Jimmu Tennō, supposed to have ascended the throne on Feb. 11, 660 B.C.

Recorded Japanese history begins with the first contact with China in the 5th century A.D. Japan was then divided into strong feudal states, all nominally under the Emperor, but with real power often held by a court minister or clan. In 1185 Yoritomo, chief of the Minamoto clan, was designated Shogun (Generalissimo) with the actual administration of the islands under his control. Clans came and went, but a dual government system—Shogun and Emperor—persisted till 1867.

First contact with the West came about 1542, when a Portuguese ship off course arrived in Japanese waters. Portuguese traders, Jesuit missionaries, and Spanish, Dutch and English traders followed. Suspicious of Christianity and of Portuguese support of a local Japanese revolt, the shoguns restricted all foreigners in 1636-38 except the Dutch, who were confined to Nagasaki. Western attempts to renew trading relations failed until 1853, when Commodore Matthew Perry sailed an American fleet into Tokyo Bay.

Japan now quickly made the transition from a medieval to a modern power. Feudalism was abolished and industrialization was speeded. An imperial army was established with conscription. The shogun system was abolished in 1867 by Emperor Meiji, and parliamentary government was established in 1889. After a brief war with China in 1894-95, Japan acquired Formosa (Taiwan), the Pescadores islands, and part of southern Manchuria. China also recognized the independence of Korea (Chosen), which Japan later annexed (1910).

In 1904-05 the new Japan won prestige by defeating Russia in the Russo-Japanese War, gaining the territory of southern Sakhalin (Karafuto) and Russia's port and rail rights in Manchuria. In World War I, Japan, which took a negligible part in military operations, seized Germany's Pacific islands and leased areas in China. The Treaty of Versailles then awarded her a mandate over the islands.

At the Washington Conference of 1921-22, Japan agreed to respect Chinese national integrity. The series of Japanese aggressions which was to lead to the nation's downfall began in 1931 with the invasion of Manchuria. The following year, Japan set up this area as a puppet state, "Manchukuo," under Emperor Henry Pu-Yi, last of China's Manchu dynasty. On Nov. 25, 1936, Japan joined the Axis by signing the anti-Comintern pact. The invasion of

China came the next year, and the Pearl Harbor attack on Dec. 7, 1941.

For many months after Pearl Harbor, the Japanese army and navy enjoyed spectacular success, but by the end of 1942 the tide had begun to turn. Three years later the dropping of the world's first atomic bomb in combat on Hiroshima, followed by a second one on Nagasaki, knocked Japan swiftly into a surrender that already had become inevitable.

The formal surrender took place Sept. 2, 1945, aboard the battleship *Missouri* in Tokyo Bay. Southern Sakhalin and the Kurile Islands reverted to Russia, and Formosa (Taiwan) and Manchuria to China. The Pacific islands remained under U. S. occupation.

General of the Army Douglas MacArthur was appointed Supreme Commander for the Allied Powers (SCAP) Aug. 14, 1945. An 11-power (later 13-power) Far Eastern Commission was created to lay down occupation policies, while the 4-power Allied council advised and consulted with SCAP in carrying them out.

Soon after the surrender, Japan began the process of democratizing its political, social and economic structure under Allied eyes. Following the Socialists' victory in elections of April 20, 1947, Japan's first Socialist Premier, Tetsu Katayama, a life-long Christian, formed a coalition Cabinet. Hitoshi Ashida (Feb. 21, 1948) and Shigeru Yoshida (Oct. 14, 1948) followed him in office.

Pres. Truman removed Gen. MacArthur from his post as Supreme Commander for the Allied Powers on April 11, 1951, and named Gen. Matthew B. Ridgway in his place.

On Sept. 8, 1951, a treaty of peace with Japan was signed at San Francisco by the U. S. and 47 other nations. The U.S.S.R., Czechoslovakia and Poland were present at the conference but did not sign the treaty, which became effective April 28, 1952.

The treaty did not place any restrictions on Japan's political institutions, economy or armed forces. Japan was limited in territory to its 4 home islands, although the treaty did not recognize Soviet seizure of the Kurile Islands and South Sakhalin.

The state of war with the U.S.S.R. was ended by a declaration ratified by the U.S.S.R. on Dec. 9, 1956. Following an overwhelming Conservative victory in the Oct. 1952 elections, Yoshida was re-elected Premier. Ichiro Hatoyama, leader of the newly formed Democratic party, succeeded him on Dec. 9, 1954. The Democrats won the most seats in elections held Feb. 27, 1955 and Hatoyama was re-elected Premier on March 18, 1955. Tanzan Ishibashi (Dec. 20, 1956) and Nobusuke Kishi (Feb. 24, 1957) followed in office.

GOVERNMENT AND DEFENSE. The Constitution, effective May 3, 1947, made drastic changes in Japan's political system. The Emperor retains only ceremonial functions, and executive power is vested in the Cabinet, headed by the Premier and collectively responsible to the Diet. Law-making power is vested solely in the Diet, composed of two houses—the House of Representatives, popularly elected for four-year terms, and the House of Councillors, with 250 members elected for six-year terms. A bill of rights guarantees certain basic liberties. Women are enfranchised for the first time. Sovereignty, formerly vested in the Emperor, now is vested in the people, and the House of Representatives can override the veto of the House of Councillors by a two-thirds vote.

The elections of Feb. 1955 distributed the 467 seats in the House of Representatives as follows (1953 standing in parentheses): Democratic, 185 (0); Liberal, 112 (199); left-wing Socialist, 89 (72); right-wing Socialist, 67 (66); Communist, 2 (1); others, 12 (129, including 76 Progressives and 35 dissident Liberals).

Ruler. Emperor Hirohito, born April 29, 1901, succeeded his father, Yoshihito, on Dec. 25, 1926. He was married on Jan. 26, 1924, to Princess Nagako, born in 1903. To them were born two sons, Crown Prince Akihito (Dec. 23, 1933) and Prince Masahito (Nov. 28, 1935), and 5 daughters. Succession to the Japanese throne is in the male line only.

Defense. The peace treaty of 1951 placed no limitations on the right of Japan to rearm, but the Constitution prohibited the maintenance of armed forces. A national "police" reserve was created in 1950, and legislation enacted in June 1954 provided for the creation of Japanese military, naval and air "defense" forces, to be built up over a period of 8 years (strength in May 1956 was 170,500), each service to have its own general staff. The new Japanese navy had 4 destroyers, 29 frigates and escort vessels and 1 submarine in Dec. 1956. The U. S. began to deliver jet fighters to the Japanese air force in 1954-55.

The bilateral defense pact between the U. S. and Japan which became effective April 28, 1952, provided for the indefinite disposition of U. S. armed forces in and about Japan. The U. S. was to furnish about \$150,000,000 in defense equipment under a mutual defense assistance agreement signed March 8, 1954.

SOCIAL AND ECONOMIC CONDITIONS. **Education.** Article 26 of the 1947 Constitution provides that "all people shall have the right to receive an equal education correspondent to their ability," and that education shall be free and compulsory as provided by law. A 1947 law provided, a simplified school structure with 6 years of

elementary education (compulsory), 3 of lower secondary, 3 of upper secondary and 4 of university education. In 1954 Japan had 22,036 elementary schools with 11,750,925 pupils, 15,906 secondary schools with 8,209,320 pupils and 528 colleges and universities with 565,453 students.

Agriculture. Japan is traditionally a land of small farms and, except in Hokkaido, the northernmost island, there is almost no large-scale farming and animal husbandry. The average holding is less than three acres. Double cropping makes self-sufficiency possible, but on a low level of subsistence.

Major crops (thousands of metric tons):

	1954	1955	1956*
Rice (rough)	11,392	14,818	13,088
Barley	2,583	2,408	2,340
Wheat	1,516	1,468	1,375
Potatoes	2,743	2,908	2,703
Sweet potatoes	5,226	7,108	7,073

* Preliminary.

Production of silk cocoons (1956) was 108,170 metric tons; tea, 59,130 tons. In 1956 there were 3,202,000 cattle, 1,160,000 hogs and 893,000 sheep.

Industry. Prewar Japan was one of the world's leading industrial nations and the only country in the Far East with highly developed textile, steel, machinery, chemical and electrical industries. The textile industry was dominant, but after 1931 considerable expansion took place in the heavy industries—metal, machinery-building and chemical—which were adaptable to war purposes.

Postwar industrial rehabilitation proceeded slowly at first, but by the end of 1956 average industrial output was more than twice the 1934-36 level. In 1954 there were 184,487 factories employing 4 or more persons, with total employment of 4,963,618 in 1955. Japan led the world in shipbuilding in 1956, completing vessels aggregating 1,538,000 gross tons, many of them super tankers.

INDUSTRIAL PRODUCTION (thousands of metric tons)

	1954	1955	1956
Pig iron and ferroalloys	4,608	5,217	5,987
Steel ingots	7,750	9,408	11,106
Cement	10,675	10,557	13,024
Cotton yarn	1,024*	923*	1,087*
Cotton fabrics	3,184†	3,018†	3,480†

* Millions of lbs. † Millions of sq. yds.

The huge interlocking monopolies (*Zai-batsu*) controlling prewar business and finance were dissolved in 1945, and reconcentration was prohibited by postwar legislation.

Trade. Before World War II, Japan ranked fifth in world trade. Private trade

was resumed in 1947; by the mid-1950s, Japan had regained its place in world trade. Recent data are as follows (in millions of U. S. dollars):

	1954	1955	1956*
Exports	1,629.3	2,010.6	2,501.0
Imports	2,399.4	2,471.4	3,229.6

* Provisional.

Leading customers in 1956 were the U. S. (22%), Hong Kong (5%), India (4%) and Malaya (3%); leading suppliers, the U. S. (33%), Australia (8%), Canada (4%) and Malaya (4%). Leading exports were textiles (35%), machinery (19%), iron and steel and manufactures (9%) and chemicals (4%). Imports included raw cotton (15%), petroleum and products (10%), wool (7%), wheat (5%) and iron ore (5%).

Communications. Before World War II the merchant marine carried almost 80 per cent of the foreign trade and was surpassed only by those of the U. S. and Britain. Wartime losses were enormous, but recovery was fairly steady. By June 30, 1956, there were 1,891 vessels (100 tons and over) with a gross tonnage of 4,075,481, according to *Lloyd's Register*.

Railway mileage in 1955 was 17,255. The national and prefectural highway system totaled 87,400 miles in 1953.

Finance. World War II left Japan with a staggering public debt, mounting inflation and a disorganized financial system. Recent data on general account (in billions of yen) are as follows:

	1954-55*	1955-56*	1956-57†
Revenue	1,185.1	1,126.4	1,034.9
Expenditure	1,040.8	1,018.2	1,034.9

* Provisional. † Budget estimate.

The national debt totaled 989,532,000,000 yen on March 31, 1957.

NATURAL FEATURES AND RESOURCES; CLIMATE. Japan's four main islands are Honshu, Hokkaido, Kyushu and Shikoku. The Ryukyu chain to the southwest is U. S. occupied and the Kuriles to the northeast are Russian occupied. The surface of the main islands consists largely of mountains separated by narrow valleys. There are about 50 more or less active volcanoes, including famous Fujiyama near Tokyo (12,385 ft.).

Minerals. Japan is relatively poor in minerals, and large imports of coal, petroleum and iron ore are necessary. Production in 1956 included coal, 46,555,000 metric tons; petroleum, 2,175,000 barrels; iron ore concentrates (55% metal content), 1,052,000 tons. In that year 3,821,000 tons of coal and 7,869,000 tons of iron ore were imported. Other minerals include lead, silver, gold and copper.

Forests. Japan is well-wooded, with about 60,000,000 acres of forest. Among forest products are bamboo, charcoal and timber. Wood pulp production in 1956 totaled 1,801,988 long tons; newsprint (1955), 460,000 metric tons; lumber (1955), 15,723,000 cubic meters.

Fisheries. Fishing, one of Japan's biggest industries, provides a staple food and considerable exports in normal years. The catch in 1955 amounted to 4,720,900 metric tons.

Climate. The Japanese climate ranges from subtropical in its southern extremes, to winter cold and snow in Hokkaido. The winter temperatures are moderated in the central islands by the Japan Current. The mean annual temperature in Tokyo is 56° and the capital's annual rainfall amounts to 60 inches.

Jordan (Hashemite Kingdom of)

Area: 37,264 square miles.*

Population (est. 1956): 1,471,000.*

Density per square mile: 39.5.*

Ruler: King Hussein I.

Prime Minister: Hussein Fakhri el-Khalidi.

Principal cities (est.): Amman, 202,000 (capital); Jerusalem (Jordanian sector), 75,000 (religious center).

Monetary unit: Jordanian dinar.

Language: Arabic.

Religions: Moslem (Sunni), 92%; Christian, 8%.

* Including Arab Palestine (area: 2,125 sq. ml.; population 1953, 745,786).

HISTORY. Jordan, once the Lordship of Oultre-Jourdain in the Latin Kingdom of Jerusalem, attracted world-wide attention in 1948 when its King, Abdullah, led Arab forces in the invasion of Palestine from the east. An ancient land, about the size of Indiana, the small kingdom was known in the time of Moses as Edom and Moab. It passed to the Amorites of Damascus and in A.D. 106 became part of the Roman province of Arabia. In 633-36 it was conquered by the Arabs, and a period of decline and depopulation ensued. It fell to the Turks in the 16th century.

Conquered from the Turks by the British in World War I, Jordan was separated from the Palestine mandate in 1920, and placed in 1921 under the rule of Abdullah ibn Hussein.

In 1923 Britain recognized Jordan's independence, subject to the mandate. During World War II, Jordan co-operated completely with Britain. On March 22, 1946, Britain abolished the mandate and recognized the full and complete independence of Jordan. That part of Palestine occupied by Jordan troops was formally incorpo-

rated by action of the Jordan Parliament on Apr. 24, 1950. Jordan's rejection of the Baghdad pact in Dec. 1955 set off a period of instability and tension.

Abdullah was assassinated June 20, 1951. His son Talal was deposed as mentally ill Aug. 11, 1952. Talal's son Hussein, born May 2, 1935, succeeded him.

GOVERNMENT AND DEFENSE. Jordan is a constitutional monarchy. The King rules with the aid of a Cabinet of department heads responsible to Parliament, which consists of the popularly elected Chamber of Deputies of 40 members and the Senate of 20 appointed members. Arab Palestine is represented in both bodies.

Defense of the country is entrusted to the British-trained Arab Legion of about 20,000 men, the most effective force among all Arab armies. The Anglo-Jordanian treaty of Mar. 20, 1948, which had mutual assistance provisions, was terminated Mar. 13, 1957. Jordan had ousted the Legion's British commander on March 2, 1956, and Britain recalled most of its remaining military officers. In Jan. 1957 Egypt, Saudi Arabia and Syria agreed to provide the equivalent of the former British defense subsidy.

SOCIAL AND ECONOMIC CONDITIONS. Life in Jordan is primitive; there are estimated to be 50,000 nomads and 120,000 seminomads. At least 95 per cent of the total area is desert. At least one-half the population is believed to be illiterate. In 1952 there were 783 elementary and 71 intermediate secondary schools with total enrollment of 139,000.

Most of the country is suitable only for pasturing sheep, goats and camels. Cultivated land is limited to a relatively small area west of the Hejaz Railway. In the drier cultivated areas of the plateau, the inhabitants retain tribal organization and still live in tents. Foreign trade is limited to the exchange of wheat, fresh fruit, wool and live animals for sugar, tea, and other necessities. Exports in 1954 were 2,823,737 dinars; imports, 19,840,468 dinars. Leading suppliers in 1954 were Britain (15%), the U. S. (10%) and western Germany (5%). Most of the exports go to neighboring Arab countries.

Despite the sparse settlement of the country, Jordan has good roads to Israel, Syria and Iraq. It is crossed from north to south by the Hejaz Railway.

TOPOGRAPHY AND CLIMATE. Jordan is mainly a plateau with an average altitude of 3,000 feet, sloping gently eastward. The western edge is a steep slope overlooking the Rift Valley (Jordan River, Dead Sea and Wadi el Araba) 3,000-4,000 feet below. In the south are mountains over 5,000 feet high and a sandstone area cut by deep

canyons. Jordanian Palestine is largely a hilly plateau. Jordan borders on the Red Sea for a few miles in the southwest. The subtropical steppe and desert have wet cold winters and dry hot summers. Rain-fall near the escarpment decreases from about 26 inches in the north to 10 inches in the south. Average maximum temperature in August is 92°; average minimum in January is 39°.

Korea (Chosen; Chosŏn)

Area: 85,266 square miles.

Population (est. 1955): 28,600,000 (almost entirely Korean).

Density per square mile: 335.4.

President, South Korea: Syngman Rhee.

Premier, North Korea: Kim Il-sung.

Principal cities (est. 1955): Seoul, 1,300,000 (capital, south Korea); Pusan, 840,000 (chief port); (est. 1952) Pyongyang, 500,000 (capital, north Korea); (est. 1949) Taegu, 313,705 (silk center); Inchon, 265,767 (seaport).

Monetary unit: Hwan.

Languages: Korean, Chinese, Japanese.

Religions: Buddhist, Confucianist, Taoist, Christian (500,300 Christians in 1938).

HISTORY. Korea, a peninsula about 600 miles long extending out from Asia between the Yellow Sea and the Sea of Japan, was an international battleground in 1950-53, when Communist troops of North Korea invaded the U. N.-recognized Republic of Korea below the 38th parallel.

According to myth, Korea was founded in 2,333 B.C. by Tangun. His dynasty is said to have ruled until 1122 B.C. when a Chinese sage, Kija, established a dynasty supposed to have ruled until 193 B.C. Later, three kingdoms were established, one of which (Silla) absorbed the other two in 666-668 A.D. and unified the peninsula.

Upon the decay of Silla the new kingdom of Koryu was founded in 935 A.D., followed in 1392 A.D. by the Yi dynasty. In 1592 the Koreans defeated a Japanese fleet and, with Chinese help, ousted the Japanese invaders from their land. In 1627, the Manchus seized Korea and placed it again under Chinese sovereignty.

In the Chinese-Japanese War of 1894-95, Japan won predominant influence in Korea, and in 1905 reduced it to a protectorate. In 1910 Japan formally annexed Korea. A Korean bid for independence was crushed ruthlessly in 1919.

In Aug. 1945, at the end of World War II, Korea was occupied by Soviet and U. S. troops. The U. S. and the U.S.S.R. were unable to agree on the formation of an all-Korean provisional government, and in Nov. 1947 the U. N. General Assembly set up a commission, boycotted by the U.S.S.R., to arrange for elections. Elections were held in the U. S. zone on May 10, 1948, for a

national assembly, which on July 12 adopted a republican Constitution and on July 20 elected Syngman Rhee President. The new republic was proclaimed on Aug. 15 and was recognized as the legal government of Korea by the U. N. General Assembly on Dec. 12, 1948. Meanwhile, a North Korean "People's Republic" had been formed in the Soviet zone north of the 38th parallel on May 1, 1948. It claimed jurisdiction over all of Korea.

On June 25, 1950, South Korea was attacked by North Korean Communist forces. U. S. armed intervention was ordered on June 27 by Pres. Truman and on the same day the U. N. invoked military sanctions against North Korea. Gen. Douglas MacArthur was named commander of U. N. forces on July 7. U. S. and South Korean troops fought a heroic holding action, but by the first week of August, they had been forced back to a 4,000 sq. mi. beachhead in southeast Korea. There they stood off superior North Korean forces until Sept. 15, when a major U. N. amphibious attack was launched far behind the Communist lines at Inchon, port of Seoul. By Sept. 30, U. N. forces were in complete control of South Korea; they then invaded North Korea and were nearing the Manchurian and Siberian borders when several hundred thousand Chinese Communist troops entered the conflict in late October. U. N. forces then retreated successfully below the 38th parallel, where in succeeding months they repulsed several major attacks.

On May 24, 1951, U. N. forces recrossed the parallel and had made important new inroads into North Korea when truce negotiations began on July 10 at Kaesong. The truce talks, later moved to Panmunjom, continued periodically in 1952 and 1953 amid sporadic hostilities. An armistice was finally signed at Panmunjom on July 27, 1953, leaving a devastated Korea in need of large-scale rehabilitation. The armistice contemplated an international political conference on the status of Korea, but negotiations for arranging it broke down. The question was discussed without result at the Geneva conference on Far Eastern problems (April 26-June 19, 1954).

The U. S. and South Korea signed a mutual defense treaty on Oct. 1, 1953, and in Aug. 1953 the U. S. Congress authorized the use of up to \$200,000,000 for the rehabilitation and economic support of South Korea.

Syngman Rhee was re-elected President of South Korea in 1952 and 1956.

GOVERNMENT. South Korea is a republic, with legislative powers vested in a National Assembly and executive power in a popularly elected President and a Cabinet named by him.

North Korea is a typical Soviet state under the Constitution adopted on Sept. 2, 1948.

SOCIAL AND ECONOMIC CONDITIONS. In 1954, there were 2,342,065 pupils in elementary schools, 324,114 in middle schools and 160,266 in higher schools in South Korea. There is a university at Seoul. School enrollment in North Korea was claimed to be 1,942,000 in 1956.

The Korean population is more or less homogeneous and successfully withstood Japanese efforts to assimilate it. South Korea has 43 per cent of the peninsula's area and over two-thirds of its population.

Korea, predominantly agricultural, cultivates about 10,850,000 acres. Chief products are rice, barley, oats, rye, millet, soybeans, tobacco, cotton and wheat. The 1956 rice crop in South Korea was about 2,807,000 metric tons (rough).

Industrial development was speeded in the last years of Japanese rule. The leading industries by value of output ordinarily are chemical, textile, food, beverage and tobacco. Korea north of the 38th parallel has by far the larger portion of the country's industry and abundant hydroelectric resources.

Korea's prewar foreign trade was closely linked with that of Japan. South Korea's postwar trade has been financed to a large extent by U. S. funds. Imports in 1955 totaled \$82,535,400 (excluding U. S.- and U. N.-financed imports of \$244,000,000); exports were \$17,602,300. Most of the trade is with the U. S., Japan and Hong Kong. Chief imports were foods and manufactured goods; chief exports, raw materials, including tungsten, graphite and raw silk. North Korea's trade is chiefly with Communist China and the U.S.S.R.

Land communications, well developed by the Japanese for strategic reasons, included about 1,800 miles of railway in operation in 1956, and 21,000 miles of highway.

South Korea is insolvent and dependent on U. S. and other contributions. The hwan was introduced in Feb. 1953 to replace the inflated won.

NATURAL FEATURES AND RESOURCES; CLIMATE. Korea's coast, with a rugged mountain range along the east, is fringed with more than a thousand islands. Several rivers are navigable for more than a hundred miles, including the Nakdong in the south, the Han in the central region and the Yalu in the northwest, on the Manchurian border.

Korea's best mining regions are in the north. Leading products are coal, gold, silver, copper, tungsten ore, iron ore, graphite, lead, alum stone and pyrite ore.

Despite Japanese exploitation, considerable Korean forest areas remain, especially in the north.

The climate is about like that of the midwestern United States, except for a heavy rainy season in July and August. Annual rainfall is approximately forty inches.

Laos (Kingdom)

Area: 91,500 square miles.

Population (est. 1955): 1,425,000.

Density per square mile: 15.6.

Ruler: King Sisavang Vong.

Premier: Prince Savanna Phuma.

Principal cities (est. 1953): Vientiane, 20,000 (administrative capital); Luangprabang, 15,000 (royal capital).

Monetary unit: Kip.

Language: Laotian.

Religion: Buddhist.

HISTORY AND GOVERNMENT. Sparsely settled Laos occupies the northwestern portion of Indo-China. In the 14th century, a unified Lao kingdom of Lanxang was constituted on both sides of the Mékong river. It was divided in the 17th century into the two kingdoms of Vientiane, which was annexed by Siam in 1827, and Luangprabang, which recognized Siamese suzerainty shortly thereafter. In 1893 both kingdoms passed to France.

Laos was reunited in 1947 as a constitutional monarchy under the Luangprabang dynasty. In 1950 it became an associated state in the French Union. The transfer of sovereignty was completed by the Paris agreements of Dec. 29, 1954. It was admitted to the U. N. in 1955.

Under the Constitution promulgated May 15, 1947, the sovereign exercises executive power through the Cabinet headed by the Premier. Legislative power is vested in an Assembly elected by indirect universal suffrage.

SOCIAL AND ECONOMIC CONDITIONS. About half the people are Laotians who live mainly in the Mékong valley, and half are mountain tribes of Chinese and Indonesian extraction. There are sizable Chinese and Vietnamese minorities. Literacy is considerably less than 50%.

About 95% of the people are farmers. The chief food crop is rice; others are maize, vegetables, cotton, cardamons and tobacco. The leading exports are benzoin, coffee, opium and lac; cattle and teak are also exported. Laos is the least developed of the former Indo-Chinese states and has little modern industry. Tin is the only mineral of importance. The northern forests are rich in valuable timber, notably teak; the logs are floated down the Mékong. The latter, in spite of rapids, is the chief transportation route. There

are no railroads and few all-weather roads. A road-rail outlet through Thailand to the port of Bangkok is being developed. **TOPOGRAPHY AND CLIMATE.** Northern Laos is mainly a region of forested ranges and plateaus cut by narrow valleys and gorges; narrower southern Laos is a sparsely forested region of terraces. The summers (May-Oct.) are wet, with rainfall up to 80 in., succeeded by a dry season, first cool (Nov.-Feb.) and then hot (Feb.-May).

Latvia

Area: 24,600 square miles.
Population (est. 1956): 2,000,000 (1940: Lettish, 75.5% [1950: 58%]; Russian, 12%; German, 3.2%; Polish, 2.5%; others, 6.8%).
Density per square mile: 81.3.
Principal cities (est. 1956): Riga, 565,000 (capital); Liepaja, 80,000 (seaport).
Language: Latvian.
Religions (census 1930): Lutheran, 56.6%; Roman Catholic, 23.7%; Greek Orthodox, 8.9%; others, 10.8%.

Descended from ancient Aryan stock, the Latvians were early tribesmen who settled along the Baltic Sea and, lacking a central government, fell an easy prey to more powerful peoples. The German Teutonic Knights first conquered them in 1158 and ruled the area as two states—Livonia and Courland. Poland conquered the territory in 1562 and ruled until 1795 in Courland; control of Livonia was disputed between Sweden and Poland from 1562 to 1629. Sweden controlled Livonia from 1629 to 1721. Russia took over Livonia in the latter year, and Courland after the third partition of Poland in 1795. From that time until 1918, the Latvians remained Russian subjects, although they preserved their language, customs and folklore. The Russian Revolution of 1917 gave them their opportunity for freedom, and the Latvian republic was proclaimed on Nov. 18, 1918.

The republic lasted little more than 20 years. It was occupied by Russian troops in 1939 and incorporated into the U.S.S.R. in 1940. German armies occupied the nation from 1941 to 1943-44, when they were driven out by the Russians. Most countries, including the United States, have refused to recognize the Soviet annexation of Latvia.

Lebanon (Republic)

Area: 4,015 square miles.
Population (est. Dec. 31, 1954): 1,450,000 (Arabian, Armenian, Circassian, Turk).
Density per square mile: 361.1.
President: Camille Chamoun.
Premier: Sami es-Solh.
Principal cities (est. 1954): Beirut, 375,000 (capital, chief port); Tripoli, 120,000 (oil pipe-line terminus).

Monetary unit: Lebanese pound (£L).

Languages: Arabic, French.

Religions (est. 1954): Christian, 54%; Moslem, 44%; others, 2%.

HISTORY. Smaller than Connecticut, Lebanon lies at the eastern end of the Mediterranean, between Israel and Syria. In ancient times it was the mountainous hinterland of the Phoenician coast towns. From the 7th to the 11th centuries there infiltrated into southern Lebanon the heretics of Islam who finally coalesced into the Druse community.

In the 19th century the Turkish Sultanate encouraged the Druses to wage civil war against the Christian Maronites. After a massacre of 2,500 Christians in 1860, Lebanon was occupied by the French for a year. From 1864 to 1914, a Christian military government ruled the area under nominal Turkish sovereignty. After World War I, France received a League of Nations mandate over Syria and Lebanon. The French drew a Lebanese border in 1920 to offset predominantly Moslem Syria and proclaimed the area a republic under French control on May 23, 1926.

Vichy forces controlled Lebanon after the fall of France in 1940, but the Allies replaced them by July 14, 1941. Despite Syrian objections, the French permitted Lebanon to declare its complete independence on Nov. 26, 1941. Lebanon joined the Arab League and took part in the invasion of Palestine on May 15, 1948.

Bishara el-Khoury, President since 1943, resigned in Sept. 1952 and was succeeded by Camille Chamoun.

GOVERNMENT. The modern Lebanese republic is governed by a President elected by Parliament, for a six-year term, and a Cabinet of Ministers appointed by the President, but responsible to Parliament, which has 66 members. The army, numbering about 8,500, is based on a cadre of native *troupes spéciales*, formerly part of the French army in the Levant.

SOCIAL AND ECONOMIC CONDITIONS. In 1954-55, 1,775 primary schools had 155,297 pupils; 262 higher primary schools, 21,442 pupils; 92 secondary schools, 4,572 pupils. Beirut has three universities. Students totaled 3,537 in 1953.

Lebanon produces tobacco, olives, grapes and other fruits, wheat and silk. Manufacturing is confined mainly to local consumers' goods. The silk industry is important in Beirut and Tripoli; cocoon production averages about 6,000 tons annually. Tobacco manufacturing is a government monopoly. An oil refinery was opened at Tripoli in 1950. (Output 1954: 545,665 metric tons.)

The customs union with Syria was dissolved in March 1950. Recent trade data (millions of U. S. dollars):

	1954	1955	1956
Exports	28.6	33.3	40.4
Imports	174.0	218.4	237.0

Leading customers in 1956 were Saudi Arabia (13%), Syria (12%) and France (8%); leading suppliers, Syria (21%), Britain (13%) and the U. S. (12%). The leading exports were wool, fruits, vegetables, barley and cotton.

A rail line links Beirut with Damascus and Syria. Another, built in World War II by Allied engineers, runs from Tripoli to the Israeli border, and is part of a line from Cairo to Istanbul, via Haifa. One of the oil pipelines from the Kirkuk field in Iraq terminates at Tripoli; the trans-Arabian pipeline from Saudi Arabia ends at Sidon.

TOPOGRAPHY AND CLIMATE. The topography is varied. There is a narrow coastal plain, and the steep Lebanon Mountains reach heights of approximately 10,000 feet. There are no large streams. Iron ore deposits are worked in the south, and building stone and marble are plentiful. The country also has thick deposits of inferior lignite coal. Lebanon has hot dry summers (about 80° in Beirut) and cool rainy winters (50°-60° in January). At Beirut, annual rainfall is more than 35 inches.

Liberia (Republic)

Area: c. 43,000 square miles.

Population (est. 1955): 1,250,000 (native Negro, 99%; American Negro, .8%; white, .1%; others, .1%).

Density per square mile: c. 29.1.

President: William V. S. Tubman.

Principal city (census 1956): Monrovia, 41,829 (capital and chief port).

Monetary unit: U. S. dollar.

Languages: English (official), native tongues.

Religion: Protestant Christian (official); Moslem, Catholic, Pagan.

HISTORY. The history of Liberia, Africa's first republic, dates from 1822, when a small colony of freed U. S. slaves was established at Cape Mesurado, near the present site of Monrovia. On July 26, 1847, independence was proclaimed, and the first President was Joseph J. Roberts, a Virginia octoroon of considerable ability. Throughout the 19th and early 20th centuries the U. S. protected Liberia from British and French encroachments, and in 1909 Liberian finances were placed under U. S. management.

After 1920, considerable progress was made toward opening Liberia's interior, but even today only about 100,000 of its inhabitants are regarded as civilized, and lack of transportation hampers development of the heavily forested inland. In

1942, a U. S.-Liberian agreement admitted U. S. troops to build strategic airports.

In 1944 an agreement provided for permanent U. S. military and naval bases.

GOVERNMENT. The government is modeled after that of the United States. The President and Vice President are popularly elected for eight years. The 31-member House of Representatives is elected for four years and the ten-member Senate for six years. Suffrage is extended only to landowners over 21 who are of Negro blood, but a 1946 constitutional amendment provided for the seating in the House of an aborigine from each province in the hinterland. Liberia's army of about 4,000 men is organized on a militia basis.

SOCIAL AND ECONOMIC CONDITIONS. Education, compulsory in theory, is conducted in 485 schools, slightly over half state and the remainder mission and private. There are 5 state and 10 mission high schools, 1 state university and 2 mission colleges. Illiteracy is estimated at 95%.

The English-speaking descendants of U. S. Negroes, known as Americo-Liberians, are the intellectual and ruling class. The aborigines, virtually all uncivilized, are divided into some 28 tribes speaking different dialects. Some are Moslems or pagans. Christians include Anglicans, Methodists, Catholics, Baptists and Presbyterians.

Agriculture, on a crude level, is the principal means of livelihood for the tribal Liberians, who raise coffee, rice, sugar cane and cassava. Native manufacturing is nonexistent except for small industry, and the country's only big enterprise is the million-acre concession granted in 1925 to the Firestone Plantations Company for rubber cultivation. Exports in the year 1956 totaled 44,520 short tons. A large iron ore concession has been developed in the Bomi Hills area by Republic Steel Corp.; the first shipment left Monrovia in June 1951. Exports in 1956 totaled 2,037,000 long tons.

Most of the trade is with the United States. Recent statistics are as follows (in thousands of U. S. dollars):

	1954	1955	1956
Exports	26,378	42,840	44,538
Imports	22,723	25,965	26,778

Chief exports in 1956 were rubber (68%), iron ore (18%) and diamonds (5%). Leading customers were the U. S. (80%), the Netherlands (5%) and western Germany (5%); leading suppliers, the U. S. (62%), Britain (11%) and western Germany (10%).

Liberia's first railroad, a 43-mile narrow-gauge line from Monrovia to the Bomi Hills iron-ore concession, began operation in 1951. Coastwise and international air

service is supplied by Pan American Airways. Interior travel is still largely by foot with native bearers, but important progress in road construction was made during and after World War II. There are no harbors except a port and naval base completed in 1947 at Monrovia, with U. S. assistance, at a cost of more than \$19,000,000.

According to *Lloyd's Register*, on June 30, 1956, 582 vessels (100 tons and over) aggregating 5,584,378 gross tons were registered under the Liberian flag, the world's leading "flag of convenience."

TOPOGRAPHY AND CLIMATE. Liberia, about the size of Ohio, has a 350-mile frontage on the west coast of Africa, between the Ivory Coast and Sierra Leone. Its only well developed area is a low coastal strip running inland about seven miles. Beyond that is a low plateau, some of it mountainous, traversed by many rivers, of which the Cavalla (Kavalli) and the St. Paul's are the most important. The climate is tropical throughout, with rainfall up to 150 inches a year on the coast.

Libya (Kingdom)

Area: 679,358 square miles.
Population (census 1954)*: 1,091,830 (Berber, with Arab admixture, 93%; Italian, 5%; Jewish, 2%).

Density per square mile: 1.6.
Ruler: King Idris I.
Prime Minister: Abdul Majid Kobar.
Principal cities (census 1954)*: Tripoli, 130,238 (joint capital); Bengasi, 70,533 (joint capital).

Monetary unit: Libyan pound (£L).
Languages: Arabic, Italian.
Religions: Moslem (93%), Christian (5%), Jewish (2%).

* Preliminary figures.

HISTORY AND GOVERNMENT. Libya, stretching along the northern coast of Africa between Tunisia and Egypt, was a part of the Turkish dominions from the 16th century until 1911. Following the outbreak of hostilities between Italy and Turkey in the latter year, Italian troops occupied Tripoli; Italian sovereignty was recognized the next year by the Treaty of Ouchy.

Libya was the scene of much desert fighting during World War II. After the fall of Tripoli on Jan. 23, 1943, it came under Allied administration. The U. N. General Assembly voted on Nov. 21, 1949, that Libya should become independent by 1952.

Following the adoption by the constituent assembly of a Constitution, the independence of the country was proclaimed by King Idris I on Dec. 24, 1951.

Under the Constitution, Libya is a hereditary monarchy with a federal form of

government. Tripolitania, Cyrenaica and the Fezzan are the constituent provinces. It has a bicameral Parliament consisting of a Senate of 24 members, half named by the King and half by the 3 provincial legislatures, and a House of Representatives elected on a proportional representation basis according to population. The Cabinet, headed by the Prime Minister, is responsible to the federal Parliament.

The ruler, King Idris I, hereditary head of the powerful Senussi sect in Cyrenaica, was born in 1890.

SOCIAL AND ECONOMIC CONDITIONS. Tripolitania, with one-sixth the area, has 68% of the population; Cyrenaica has 27% and the Fezzan 5%. About 75% of the population is rural and about 45% of that is nomadic or seminomadic.

Animal husbandry is the basic economic activity, and there are considerable numbers of cattle, sheep, camels and goats. Agriculture is possible only in the Mediterranean coastal region, where dates, olives, citrus fruit, wheat and barley are grown, and in oases in the Fezzan and elsewhere; here the principal product is dates. Sponge and tunny fisheries are carried on off the coast.

Exports in 1956 totaled £L 3,805,000; imports, £L 16,601,000. Chief exports were peanuts (22%), scrap iron (13%) and esparto (11%). Italy was the leading customer (38%) and supplier (30%).

Railroads total 242 miles. A road extends along the coast. The principal means of communication inland are the caravans, which follow traditional routes.

TOPOGRAPHY AND CLIMATE. The area has three natural divisions from the coast inland—the Mediterranean coastland, the sub-desert, and the desert.

Winters are cool and summers warm along the coast, and hotter in the interior. Bengasi has an average temperature of 55° in January and 78° in July. Rainfall in the Tripoli area is about 15 inches a year.

Liechtenstein (Principality)

Area: 61 square miles.
Population (census 1955): 14,861 (mostly German).

Density per square mile: 243.6.
Ruler: Prince Franz Joseph II.
Chief of Government: Alexander Frick.
Principal city (census 1955): Vaduz, 3,031 (capital).

Monetary unit: Swiss franc.
Language: German.
Religion: Roman Catholic.

Tiny Liechtenstein lies on the east bank of the Rhine, just south of Lake Constance, between Austria and Switzerland. It abolished its army in 1868 and has managed to stay neutral and undamaged in all

European wars which have occurred since that date.

Founded in 1719, Liechtenstein became independent in 1866. Franz Joseph II, the reigning Prince, was born in 1906, and succeeded his great uncle, Franz I, in 1938. In 1943 he married Countess Gina Wilczek of Austria.

The Constitution of 1921 provided for a legislature, the *Landtag*, of 15 members elected by direct, universal suffrage. Liechtenstein adopted Swiss currency in 1921, and has been part of the Swiss Customs Union since 1924. Its foreign trade statistics are included in those of Switzerland, which also administers the country's telegraph and postal service.

Wheat, wine and fruit are the chief products. There are small manufactures of cotton, leather and pottery.

In 1956 there were 18 elementary and secondary schools, with total enrollment of 2,591.

Liechtenstein's area includes low valley land and upland peaks—Falkais at 8,401 feet, and Naafkopf, 8,432 feet. The chief mineral product is marble.

Lithuania

Area: 31,200 square miles.

Population (est. 1956): 2,700,000 (1940: Lithuanian, 81% [1950: 55%]; German, 4%; Polish, 3%; Russian, 2%; others, 10%).

Density per square mile: 86.5.

Principal cities (est. 1956): Vilnius (Wilno), 200,000 (capital); Kaunas, 195,000 (river port).

Language: Lithuanian.

Religions: Roman Catholic, 80%; Lutheran, 5.5%; others, 14.5%.

Southernmost of the three Baltic states, Lithuania in the middle ages was a grand duchy joined to Poland through royal marriage. Poles and Lithuanians merged forces to defeat the Teutonic Knights of Germany at Tannenberg in 1410 and extended their power far into Russian territory. In 1795, however, following the third partition of Poland, Lithuania fell into Russian hands and did not gain its independence until 1918, toward the end of World War I.

The republic was occupied by the U.S.S.R. in 1939 and annexed outright the following year. From 1940 to 1944 it was occupied by German troops and then was retaken by the Soviet Union. Western countries, including the U. S., have not recognized the Russian annexation.

Density per square mile: 312.9.

Ruler: Grand Duchess Charlotte.

Premier: Joseph Bech.

Principal city (est. 1953): Luxembourg, 66,382 (capital, iron and steel).

Monetary unit: Luxembourg franc.

Languages: Luxemburgian, French, German.

Religion: Mainly Roman Catholic.

HISTORY. Luxembourg is a small buffer state between France, Germany and Belgium. Invaded and occupied in both World Wars I and II despite the fact that its neutrality was guaranteed, Luxembourg suffered most in the latter war, when the Nazis deported several thousand natives as slave labor.

Sigefroi, Count of Ardennes, an offspring of Charlemagne, was Luxembourg's first sovereign ruler. In 1060 the country came under the rule of the House of Luxemburg. From the 15th to the 18th centuries, Spain and Austria held it in turn. The Congress of Vienna in 1815 made it a Grand Duchy and gave it to William I, King of the Netherlands. In 1839 the Treaty of London ceded the western part of Luxembourg to Belgium.

After the Nazi invasion on May 10, 1940, the government fled the country, returning in 1944 after Allied troops had liberated it. In 1948 the grand duchy joined the Western European Union, and in April 1949 it adhered to the North Atlantic Pact.

GOVERNMENT. Luxembourg is a constitutional monarchy with the Crown hereditary in the House of Nassau. The sovereign, Grand Duchess Charlotte, was born Jan. 23, 1896. The heir to the throne is Prince Jean, born Jan. 5, 1921.

The Constitution of 1868, as amended in 1919, provides for democratic government through a Chamber of Deputies of 52 members, popularly elected for five-year terms. The Constitution leaves to the sovereign the right to organize the government, which consists of a Minister of State who is President of the government (Premier) and at least 3 other ministers. There is also a Council of State of 15 members, chosen for life by the sovereign.

SOCIAL AND ECONOMIC CONDITIONS. Education is compulsory for all children between the ages of 6 and 13. The common or idiomatic language is *letzeburgesch*; German and French are also spoken. Illiteracy is practically unknown.

Although the soil is not very fertile, agriculture is prosperous. Principal crops are potatoes, oats, wheat, rye and grapes. Wine production in 1956 was 1,664,700 U. S. gal.

The mining and metallurgical industries, based on iron ore found in the south, are the most important. In 1956 an average of 28 blast furnaces produced 3,312,883 metric tons of pig iron. Production of steel ingots was 3,455,714 tons and iron and steel

Luxemburg (Grand Duchy)

Area: 999 square miles.

Population (est. Dec. 31, 1956): 312,500 (Luxemburgian, French, German).

workers averaged 20,313. Electrical energy produced in 1956 totaled 1,162,797,000 kwh. Other industries include brewing, sparkling wine, leather, textiles and cement.

By a customs union between Belgium and Luxemburg which came into force on May 1, 1922, to last for 50 years, customs frontiers between the two countries were abolished. On Jan. 1, 1948, an economic union with Belgium and the Netherlands (Benelux) came into existence. Luxemburg's foreign trade figures are included in those of Belgium and no separate statistics are available; exports consist chiefly of iron and steel products.

Transportation facilities in 1955 included 295 miles of railway and 2,670 miles of roads.

Luxemburg's prosperity depends largely on its large iron ore deposits (metal content 30%). Production (1956) was 7,593,-926 metric tons; exports, 1,844,311 tons.

Maldives Islands (Sultanate)

Area: c. 115 square miles.

Population (est. 1955): 89,000.

Density per square mile: c. 773.9.

Sultan: Amir Mohammed Farid Didi.

Prime Minister: Ibrahim Ali Didi.

Principal city (est.): Malé, 8,000 (capital).

Monetary unit: Rupee.

Languages: Sinhalese (dialect), Arabic.

Religion: Moslem.

The Maldives Islands, about 400 miles to the southwest of Ceylon in the Indian Ocean, were first visited by the Portuguese in the 16th century. They came under British protection in 1887 and were a dependency of the colony of Ceylon until 1948, when relations with Britain were formalized in a treaty which left domestic affairs in the hands of the islanders. Reactivation of a British airfield was announced Jan. 3, 1957.

For centuries a sultanate, the islands adopted a republican form of government in 1952, but the sultanate was restored in Feb. 1954. There is a bicameral legislature which is popularly elected.

The people are great traders and fishermen. Besides fishing, coir making is the chief local industry. Exports include coir, coconuts, copra, millet and fruit.

The islands consist of 12 coral atolls with about 2,000 small islands, of which about 300 are inhabited.

Mexico (Republic) (Estados Unidos Mexicanos)

Area: 760,373 square miles.

Population (est. June 30, 1956): 30,538,-000 (mestizo, 55%; Indian, 29%; white 15%; others, 1%).

Density per square mile: 40.2.

President: Adolfo Ruiz Cortines.

Principal cities (census 1950): Mexico City, 2,234,795 (capital); Guadalajara, 377,-016 (manufacturing); Monterrey, 333,422 (metallic industries); Puebla, 223,667 (cotton textiles); Mérida, 142,858 (sisal); San Luis Potosí, 125,662 (mineral smelting).

Monetary unit: Peso.

Languages (1940): Spanish, 94%; Indian, 6%.

Religion: Predominantly Roman Cath.

HISTORY. Mexico's early history is shrouded in mystery. At least two civilized races—the Mayas and later the Toltecs—preceded the wealthy Aztec empire conquered in 1519-21 by the Spanish under Hernando Cortez. Spain ruled for the next 300 years until 1810 (the date was Sept. 16 and is now celebrated as Independence Day), when the Mexicans first revolted. They continued the struggle and finally won independence in 1821 by the Treaty of Córdoba.

Turbulent years followed. From 1821 to the first presidency of Porfirio Díaz in 1877, there were two Emperors, several dictators and enough Presidents and provisional executives to make a new government on the average of every nine months. Mexico lost Texas (1836), and after defeat in the war with the United States (1846-48) it lost the area comprising the present states of California, Nevada and Utah, most of Arizona and New Mexico, and parts of Wyoming and Colorado.

In 1855 the Indian patriot Benito Juárez began a series of liberal reforms including the disestablishment of the Catholic Church, which had acquired vast property. A subsequent civil war was interrupted by the French invasion of Mexico (1861), the crowning of Maximilian of Austria as Emperor (1864), and then his overthrow and execution by forces under Juárez, who again became President in 1867.

During the rule of the dictator Porfirio Díaz (1877-80 and 1884-1911) the country was freed from political strife, made substantial economic progress, and gained a respected position in foreign affairs. But Díaz' reactionary land policy led to revolution and his resignation in 1911. The next few years were marked by bloody political-military strife, and trouble with the United States culminating in the punitive expedition into northern Mexico (1916-17) in unsuccessful pursuit of the bandit-politician Pancho Villa.

Lázaro Cárdenas (1934-40), backed by the National Revolutionary party (PRI), began a socialistic program of land distribution to peasants, government seizure of foreign-owned oil lands, and broad labor reforms. General Manuel Avila Camacho, President during World War II, cooperated closely with the United Nations and followed Cárdenas' policy at home.

In July 1946, Miguel Alemán was elected President, backed by the Avila Camacho administration and the PRI. Alemán continued the internal policy initiated by Cárdenas; his administration was marked by continued cordial relations with the United States. Adolfo Ruiz Cortines, the administration candidate, was elected to succeed him in quiet elections held in July 1952; he took office Dec. 1.

GOVERNMENT AND DEFENSE. The President, popularly elected for six years and ineligible to succeed himself, governs with a Cabinet of ministers. The Federal Congress has two houses—the 162-member Chamber of Deputies, elected for three years (one for each 150,000 population) and the 60-member Senate, elected for six years. All married male citizens at least 18, and all single male citizens at least 21 are eligible to vote. Women received the right to vote in 1953.

Each of the 29 states has considerable autonomy, with a popularly-elected Governor, legislature and local judiciary. The President appoints the Governors of the two Federal territories, and the governing body of the Federal District.

Military service is compulsory, and the President holds supreme command of the armed forces, through the Secretary of War. The national army, greatly modernized during World War II, numbered about 55,000 men in 1951; the air force had 270 planes and two U. S.-trained squadrons. In Dec. 1956, the navy had 8 frigates and escort vessels and a number of other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. *Education.* Illiteracy is one of Mexico's big problems, and the government is trying hard to reduce the rate, estimated at 38 per cent in 1950, as against 60 per cent in 1930. Education is free, compulsory from 6 to 16, separated from the church, and under Federal control. There were 26,614 primary schools in 1953 with an enrollment of 3,117,012 and 573 secondary schools with 34,367 students. There are 14 universities, including the University of Mexico at Mexico City.

Agriculture. Primitive agricultural methods are steadily giving way to modern practices. More than 17,000,000 acres are under cultivation. About 2,500,000 acres are irrigated, but the eventual total of watered land is expected to be 5,500,000 acres. The Yucatán peninsula, at the southern end of the Gulf of Mexico, raises more than half of the world supply of sisal hemp (121,000 metric tons in 1955).

Production estimates for principal crops in 1955-56 were as follows, in metric tons: wheat, 820,000; maize, 3,200,000; rice, 190,000; coffee, 1,400,000 bags of 132 lb. each; cotton, 466,000; cottonseed, 730,000. Sugar production in 1955-56 totaled about 917,000 tons.

Stockraising is important on non-arable land. Mexico's inventory of livestock in 1956 included an estimated 16,000,000 cattle, 5,300,000 sheep and 7,900,000 hogs.

Industry. The leading industrial products are cotton cloth and thread, beer, sugar, iron and steel. Other products are flour, soap, cigars and cigarettes, rubber manufactures, vegetable oils, paper, wool, silk and rayon yarn and cloth, cement, shoes and glass. In 1955, 327,600 metric tons of pig iron and 525,600 tons of steel were produced.

Trade. Foreign trade data, in millions of pesos, are as follows:

	1954	1955	1956
Exports	6,140	8,350	8,595
Imports	8,926	11,065	13,401

Chief exports in 1956 were cotton (28%), coffee (12%), copper (8%), lead (7%) and zinc (5%). The U. S. took 73% of the exports and supplied 78% of the imports. Other leading customers were Japan, Britain and western Germany. Leading imports included machinery, vehicles and iron and steel products.

Communications. Railway mileage (1955) was 14,674. Total highway mileage (1955) was 35,566, of which 20,990 mi. were surfaced. The merchant fleet had 64 vessels (100 tons and over) aggregating 164,759 gross tons on June 30, 1956 (*Lloyd's Register*). Veracruz and Tampico, on the Gulf of Mexico, are the country's most important ports.

Finance. Recent government financial data are as follows (in millions of pesos):

	1955*	1956*	1957*
Revenue	5,700	6,700	7,578
Expenditure	5,700	6,700	7,578

* Budget estimate.

NATURAL FEATURES AND RESOURCES; CLIMATE. Mexico is a great, high plateau, open to the north, with mountain chains on east and west and with ocean-front lowlands lying outside of them. It has two big spears—the peninsula of Lower California which is mountainous, and the Yucatán peninsula, which is mostly a low plain. The eastern mountains are marked by high volcanoes.

Minerals. Mexico is one of the richest mineral countries in the world. It outranks all other countries in silver production (1956: 43,077,046 fine oz.). Other minerals, with 1956 production, are gold, 350,242 oz.; lead, 216,822 short tons; copper, 66,276 tons; zinc, 274,348 tons; antimony, 5,022 tons; tin, 529 tons; (1955) coal, 1,342,262 metric tons; iron ore, 107,565 tons. A considerable variety of other industrial minerals is produced. Deposits of uranium are reported to exist.

Most of the Mexican mining properties are foreign-owned, and the industry is declining in relative importance. The oil-

fields, lying along the east coast, were seized by the government in 1938, but later the foreign owners were indemnified. Production in 1956 was 91,000,000 barrels.

Forests. Mexico's forests are of considerable importance; they include pine, oak, fir, mahogany, red and white cedar and primavera. Resins, turpentine and vegetable wax are also produced. Yucatán produces nearly all of the world's chicle, the juice of the sapodilla tree, used as the base of chewing gum.

Climate. Partly in the torrid and partly in the north temperate zone, Mexico has three distinct climate regions. From the coasts inland to the plateau it is tropical, with temperatures sometimes topping 100°, but averaging from 77° to 82°. The plateau is sub-tropical with an average of 75°, and the mountains, over 6,000 feet, average 60°. On the east coast the annual rainfall sometimes reaches 100 inches, while in Lower California rain hardly ever falls. Rainfall on the plateau is 20 to 40 inches a year, comparable to that of the west central United States. In Mexico City the coldest months are December and January (about 55°); the warmest, April and May (65°). The wet season extends from April to September.

Monaco (Principality)

Area: .59 square mile (375 acres).

Population (census 1956): 20,422.

Density per square mile: 34,613.6.

Ruler: Prince Rainier III.

Principal and only cities (census 1951): Monaco, 1,860; La Condamine, 9,858; Monte Carlo, 8,484.

Monetary unit: French franc.

Language: French.

Religion: Roman Catholic.

A tiny, hilly wedge driven into the French Mediterranean coast nine miles east of Nice, Monaco is a little land of pleasure with a tourist business that runs as high as 1,500,000 visitors a year. Monaco had popular gaming tables as early as 1856. Five years later, a 50-year concession to operate the games was granted to François Blanc, of Bad Homburg. This concession passed into the hands of a private company in 1898.

The Phoenicians, and after them the Greeks, had a temple on the Monacan headland honoring Hercules. From *Monoi-kos*, the Greek surname for this mythological strong man, the principality took its name. After being independent for 800 years, Monaco was annexed to France in 1793 by the French Revolutionists, and was placed under Sardinia's protection in 1815. In 1861, it went under French guardianship but continued to be an independent country.

Prince Albert of Monaco gave the principality a Constitution in 1911, creating a

National Council of 18 members popularly elected for four years. The government is under a ministry, acting on the Prince's authority. The ruler, Prince Rainier III, born May 31, 1923, succeeded his grandfather, Louis II, on the latter's death, May 9, 1949. Rainier was married April 19, 1956, to Grace Kelly, U. S. actress. A daughter, Princess Caroline Louise Marguerite, was born Jan. 23, 1957.

Mongolian People's Republic (Outer Mongolia) (Republic)

Area: 614,350 square miles.

Population (est. 1956): 1,000,000 (Mongol, except for about 100,000 Russians and 50,000 Chinese).

Density per square mile: 1.6.

Chairman of Presidium: Zh. Sambu.

Prime Minister: Y. Tse Den-bal.

Principal city (est. 1954): Ulan Bator, 100,000 (capital).

Monetary unit: Tugherik.

Languages: Mongolian, Russian.

Religion: Lama-Buddhist.

HISTORY AND GOVERNMENT. The Mongolian People's Republic, known also as Outer Mongolia, is a Russian satellite that measures more than twice the area of Texas. It contains the original homeland of the historic Mongols, whose power reached its zenith during the 13th century under Kublai Khan. The area accepted Manchu rule in 1689, but after the Chinese Revolution of 1911 and the fall of the Manchus in 1912, the northern Mongol princes expelled the Chinese officials and declared independence under the Khutukhtu or "Living Buddha." In 1921, Soviet troops entered the country and facilitated the establishment of a republic by Mongolian revolutionaries in 1924 after the death of the last Living Buddha. China, meanwhile, continued to claim Outer Mongolia but was unable to back the claim with any strength. Under the Chinese-Russian Treaty of 1945, China agreed to give up Outer Mongolia, which, after a rigged plebiscite, became nominally independent.

The government of the republic is strikingly similar to the Soviet system. The Great Hural or Huruldan (parliament) is elected by universal suffrage, meets at least once in three years and picks 30 members to act as an executive committee—the Little Hural—which in turn selects a presidium of seven members as an interim body. A Cabinet of ten ministers appointed by the Little Hural governs the country.

SOCIAL AND ECONOMIC CONDITIONS. A number of young Mongols are regularly sent to the U.S.S.R. for technical training. In 1953, there were said to be 432 primary

and secondary schools, 16 technical schools and several higher-education institutions.

The country is largely pastoral. There are few areas suitable for crop growing, but some millet, rye and wheat are produced. Most of the people are essentially nomadic or seminomadic; flocks and herds remain the chief source of wealth.

There are a few industrial enterprises. All land, natural resources, factories, mines, hay-making stations and public utilities are nationalized.

Foreign trade, a state monopoly, is carried on mainly with the Soviet Union, but also with Communist China. The leading exports are livestock, wool, hides, animal hair, meat and furs.

NATURAL FEATURES AND RESOURCES; CLIMATE. The productive regions of Outer Mongolia—a tableland ranging from 3,000 to 5,000 feet in elevation—are in the north, which is well drained by numerous rivers, including the Kerulen, Tola, Orkhon and Selenga.

Reserves of 500,000,000 tons of coal are said to exist in the Nalaikha field near Ulan Bator. Some gold is mined. Deposits of antimony, copper, iron ore, lead, graphite, mercury, sulfur and silver exist.

The climate is continental, with hot summers and cold winters. Mean temperature at Ulan Bator is 15° in January and 64° in July. Rainfall is light throughout the country, and is almost negligible in the Gobi Desert in the southeast.

Morocco (Kingdom)

(Maroc)

Area: 174,553 square miles.

Population (est.): 9,700,000.

Density per square mile: 55.6.

Ruler: King Mohammed V.

Prime Minister: Si M'Barak Ben Bekkal.

Principal cities (census 1951-52): Casablanca, 682,388 (chief seaport); Marrakesh, 215,312 (trading center); Fez, 179,372 (commercial center); Rabat, 156,209 (French administrative center); Tetuán (census 1950), 80,732 (Spanish administrative center).

Monetary units: French franc, Spanish peseta.

Languages: Arabic, French, Spanish.

Religions: Chiefly Moslem.

HISTORY. Morocco, about the size of California, is just south of Spain across the Strait of Gibraltar and looks out on the Atlantic from the northwest shoulder of Africa. It was once the home of the Berbers, who helped the Arabs invade Spain in A.D. 711 and then revolted against them and gradually won control of large areas of Spain for a time after 739.

The country was ruled successively by various native dynasties and maintained regular commercial relations with Europe, even during the 17th and 18th centuries when it was the headquarters of the

famous Salli pirates. In the 19th century, clashes with the French and Spanish became frequent. Finally, in 1904, France and Spain divided Morocco into zones of French and Spanish influence, and these were established as formal protectorates in 1912.

Meanwhile, Morocco had become the object of big-power rivalry, which almost led to a European war in 1905 when Germany attempted to gain a foothold in the rich mineral country. By terms of the Algeiras Conference (1906), Morocco was internationalized economically and France's privileges were limited. War again seemed imminent in 1911, when Germany dispatched a warship to Agadir in an evident attempt to intimidate France. Again the dispute was settled, however, and this time Germany recognized France's right to establish a protectorate over Morocco.

The Tangier Statute, concluded by Britain, France and Spain in 1923, created an international zone at the port of Tangier, permanently neutralized and demilitarized. In World War II, Spain occupied the zone, ostensibly to insure order, but was forced to withdraw in 1945, and the international rule was re-established.

Sultan Mohammed V was deposed by the French in Aug. 1953 and replaced by his uncle, but nationalist agitation forced his return in Nov. 1955.

France recognized the independence and sovereignty of Morocco on March 2, 1956. Spain followed on April 7, 1956. The Tangier international zone was abolished by a declaration signed Oct. 29, 1956. Morocco was admitted to the U. N. Nov. 12, 1956.

GOVERNMENT. Pending the adoption of a Constitution, Morocco is an absolute monarchy under the King. He is advised by a Cabinet of Moroccan ministers headed by the Prime Minister.

During a transitional period, the status of the French and Spanish armed forces remains unchanged, but a national army is in the process of formation.

SOCIAL AND ECONOMIC CONDITIONS. Most of the natives are illiterate; some get rudimentary education in Koranic schools or state-maintained institutions. Education is provided for Europeans.

The natives are Berbers, roughly divided by customs and way of life into three groups—the Rif group along the coast, the central or Berber group in the mid-Atlas Mountains, and the southern or Chleuh in the high Atlas and the Sus. There is a large Jewish population. Most of the Europeans live in the cities.

Morocco is essentially agricultural. In the former French zone, about 19,600,000 acres are arable, with 1956 production of wheat 1,066,000 metric tons; of barley, 1,650,000 tons. Corn, beans, peas, hemp,

sorghum, citrus fruits and dates also are raised. Production of olive oil in 1956 was 30,000 tons. In 1955 there were 15,400,000 sheep and 2,466,000 cattle.

In the former Spanish zone, agriculture is largely undeveloped, but it has potential importance. Barley, wheat, maize and sorghum crops are the most important.

Manufacturing industries introduced by Europeans, mostly small, produce chemicals, flour, leather, stone, beverages and textiles. Native industries include carpet weaving and making Turkish slippers.

Exports from the French zone in 1956 totaled 118,829,000,000 fr.; imports, 155,559,000,000 fr. Chief exports were phosphate (20%), barley (7%), olive oil (7%) and citrus fruit (6%). France took 53% of the exports and supplied 48% of the imports, which included sugar, vehicles, petroleum products, cotton cloth and tea. Exports from the Spanish zone in 1951 totaled 300,500,000 pesetas and imports 808,400,000 pesetas. A large proportion of the trade was carried on with Spain. Major exports are iron ore, fish and grain; imports include flour, sugar, tea, wine and textiles. Tangier's exports in 1955 were 2,760,652,000 fr.; imports, 11,672,894,000 fr.

Railroads in 1951 totaled 984 miles in the French zone and 57 miles (standard gauge) in the Spanish zone. Highway mileage in 1953 was approximately 6,300 in the French zone, approximately 540 in the Spanish zone and 65 in Tangier. Casablanca, which handles 80 per cent of the French zone trade, has perhaps the world's largest artificial port.

Exploitation of French Morocco's almost inexhaustible deposits of phosphate is a state monopoly and produced a total of 5,328,000 metric tons in 1955. Other major minerals are coal, cobalt, iron ore, manganese ore, molybdenum, tin, zinc and lead. Iron ore (1955: 1,040,000 metric tons) is the chief mineral of the Spanish zone; others are antimony and manganese.

NATURAL FEATURES; CLIMATE. On the Atlantic coast there is a fertile plain; the Mediterranean coast is mountainous, making most of the Spanish zone a rugged area. The Atlas Mountains, running north-eastward from the south to the Algerian frontier, average 11,000 feet in elevation.

Morocco's climate is essentially Mediterranean, modified by the Atlantic. On the Atlantic coast the temperatures are relatively cool (at Mogador, 61.5° in January and 72.3° in August). Inland the climate is more continental, with colder winters and hotter summers (at Fez, 50° in January, 80.6° in August). Rainy seasons are in October-November and April-May (38 inches annually at Tangier, 22 at Rabat, 17 at Casablanca, 11 at Mogador).

Nepal (Kingdom)

Area: 54,510 square miles.

Population (census 1954): 8,431,537 (Gurkha [predominant], Magar, Gurung, Bhotia [Tibetan], Newar).

Density per square mile: 154.7.

Ruler: Mahendra Bir Bikram.

Prime Minister: Kunwar Inderjit Singh.

Principal city and capital: Katmandu (estimated population, 108,800).

Monetary unit: Nepalese rupee.

Languages: Parbatia, Gubhajib, Tibetan.

Religions: Hinduist, Buddhist.

HISTORY. A landlocked country about the size of Iowa, lying between the Republic of India and Tibet, Nepal has two great distinctions. It contains Mt. Everest, 29,028 feet high, the tallest measured mountain in the world. And it produces some of the toughest fighting men in the world—the Gurkhas.

Led by Rajah Prithwi Narayana, the Gurkhas invaded Nepal from India in 1768 and conquered it. A commercial treaty was signed with Britain in 1792, and in 1816, after more than a year's hostilities, the Nepalese agreed to allow British residents to live in Katmandu, the capital. In 1923 Britain recognized the absolute independence of Nepal. The United States and Nepal signed a treaty of friendship and trade on April 25, 1947. King Tribhubana was deposed on Nov. 7, 1950, but was returned to the throne with Indian assistance on Feb. 15, 1951. On his death Mar. 13, 1955, his son Mahendra became ruler. Nepal was admitted to the U. N. in 1955.

Nepalese troops assisted the British during the Indian Mutiny, the Tibet War of 1904, World War I, the Afghan hostilities of 1919, and World War II.

GOVERNMENT. Until 1951, real power was vested in the Prime Minister, nominated by special rules from among the royal family. The King now appoints the Prime Minister and Cabinet members, who are responsible to him. The first commoner Prime Minister, M. P. Koirala, took office in Nov. 1951.

The predominant Gurkhas are essentially a military caste. The army numbers about 20,000 regulars and 25,000 reserves. More than 100,000 Gurkha volunteers fought with the Indian Army in the Burma campaign of World War II.

ECONOMIC CONDITIONS. Cultivated and irrigated where possible, the main valley of Nepal grows rice, wheat, pulse, fruits, vegetables, spices, sugar cane and potatoes. A few sheep and cattle are grazed. Manufacturing is limited to native handicraft, but jute and textile mills are being established. Trade with India and Pakistan passes through frontier stations; there are two mountain trade routes to Tibet.

Main exports include hides, skins, opium, gums, resins, dyes, jute, wheat, pulse, rice, spices and timber. Two railroads enter Nepal for short distances—one from Raxaul, India, to Amlekhganj, the other from Jayauagar to Bijulpura. Transportation is for the most part difficult; there were only about 350 mi. of roads in 1955.

NATURAL FEATURES AND RESOURCES; CLIMATE. Along its southern border, Nepal has a strip of level land which is partly forested, partly cultivated. North of that is the slope of the Himalayan Range, including Mt. Everest (29,028 ft.), which was climbed for the first time in 1953, and many peaks higher than 20,000 feet. Mineral resources, nearly all unexploited, include lignite, copper, zinc, lead, sulfur, marble and iron. Southern Nepal has valuable forests which yield gum, timber, resin and dye. Hemp plants grow wild. Mean temperature is 60°, with the hot season from April to June. Most of the rainfall occurs from June to October.

Netherlands (Kingdom) (Koninkrijk der Nederlanden)

Area: 12,482 square miles.*
Population (est. Jan. 1, 1957): 10,957,040
(practically all Dutch).

Density per square mile: 877.8.

Sovereign: Queen Juliana.

Prime Minister: Willem Drees.

Principal cities (est. 1957): Amsterdam, 871,188 (capital, financial center); Rotterdam, 722,718 (chief port); The Hague, 606,728 (seat of government); Utrecht, 247,816 (railway center); Haarlem, 167,264 (tulip center); Eindhoven, 157,621 (industrial center).

Monetary unit: Guilder.

Language: Dutch.

Religions (census 1947): Roman Catholic, 38.5%; Dutch Reformed, 31.0%; other Protestant, 13.3%; Jewish, 0.2%; others and no creed, 17.0%.

* Excluding waterways and bodies of water larger than 185 acres.

HISTORY. Julius Caesar found the low-lying Netherlands inhabited by Germanic tribes, the Nervii, Frisii and Batavi. The Batavi on the Roman frontier did not submit to Rome's rule until 13 B.C., and then only as allies. A part of Charlemagne's empire in the 8th century A.D., the area later passed into the hands of Burgundy and the Austrian Hapsburgs and finally in the 16th century came under Spanish rule. When Philip II of Spain suppressed political liberties and the growing Protestant movement in the Netherlands, a revolt led by William of Orange broke out in 1568. Under the Union of Utrecht in 1579, the seven northern provinces became the Republic of the United Netherlands.

The Dutch East India Company had been established in 1602, and by the end of the 17th century Holland was one of

the great sea and colonial powers of Europe.

Following Napoleon's defeat, the United Netherlands and Belgium became the "Kingdom of the United Netherlands" under William I, son of William V and head of the House of Orange. The Belgians withdrew from the union in 1830, forming their own kingdom. William I abdicated in favor of William II in 1840; the latter was largely responsible for the promulgation of a liberal Constitution in 1848.

The Netherlands continued to prosper during the long reign of William III from 1849 to 1890. The male line of the House of Nassau became extinct with his death in 1890 and he was succeeded by his 10-year-old daughter, Wilhelmina, who was crowned Queen in 1898.

Neutrality was maintained during World War I, but overseas trade suffered heavily from the Allied blockade and German submarine warfare. At the outbreak of World War II neutrality was again proclaimed, but German troops invaded the country May 10, 1940, and by May 15, Dutch forces were ordered to lay down their arms. Queen Wilhelmina and Crown Princess Juliana fled to London, where a government-in-exile was established under Prime Minister P. S. Gerbrandy.

The German army in the Netherlands capitulated May 5, 1945, and on May 23, the Dutch government met once more in The Hague. Queen Wilhelmina abdicated after her fiftieth anniversary as ruler on Sept. 6, 1948, and was succeeded by Juliana, her only daughter.

The Labour party gained a plurality in elections held in 1952 and 1956, and Willem Drees continued as Prime Minister at the head of coalition governments.

RULER. Queen Juliana, who was born April 30, 1909, was married on Jan. 7, 1937 to Prince Bernhard of Lippe-Biesterfeld (born in 1911). They have four daughters: Beatrix, heiress apparent (born Jan. 31, 1938); Irene (born 1939); Margriet Francisca (born 1943), and Maria Christina (born 1947).

GOVERNMENT AND DEFENSE. The Netherlands is a constitutional and hereditary monarchy, with female succession taking place only in default of male heirs.

Executive power is vested exclusively in the sovereign, while legislative power rests with the sovereign and the States-General (Parliament). The upper chamber of Parliament, with 75 members, is elected for 6 years by the provincial states. The lower chamber, which shares with the government the privilege of initiating new bills and proposing amendments, consists of 150 deputies who are elected directly for four years and retire *en bloc*. Executive power is exercised in part by responsible ministers, headed by the Prime Minister

and holding office at the pleasure of the sovereign. Suffrage is universal for all Dutch subjects of 23 years of age. The party standing in the lower chamber (elections of June 1956, after adjustments required by constitutional amendments increasing membership) was as follows: Labour 50, Catholic 49, Anti-Revolutionary 15, Freedom and Democracy 13, Christian Historical Union 13, Communist 7, Political Reform 3.

Each of the eleven provinces has a local representative body—a Provincial State—presided over by a Royal Commissioner. Each of the 1,014 communes has a locally elected Council and a Mayor appointed by the Crown.

Defense. Military service is compulsory. The army had three divisions in 1955, and the air force 300 planes. In Dec. 1956 the navy had 1 fleet carrier, 2 light cruisers, 12 destroyers, 6 submarines, 24 frigates and escort vessels.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Education is compulsory from the ages of 7 to 13; illiteracy is almost unknown. In 1954-55, elementary schools numbering 7,597 (of which 5,101 were private) had a total enrollment of 1,451,289; 1,359 secondary schools had 256,267 pupils. The 6 universities and 4 *hogescholen* (vocational colleges) had 27,555 students in 1953-54. The 4 public universities are at Leyden, Utrecht, Groningen and Amsterdam; the 2 private universities are the Calvinist University of Amsterdam and the Roman Catholic University of Nijmegen.

Agriculture. Dutch farms are characteristically small, with only a few larger than 250 acres. Dairying is more important than crop growing; production of cheese, milk, butter and eggs is under state control. Recent production data are as follows (thousands of metric tons):

	1954	1955	1956*
Wheat	397	350	309
Barley	207	264	273
Rye	512	465	492
Oats	465	582	483
Potatoes	4,148	4,082	3,531
Beet sugar	415	416	365
Butter	82	74	77
Cheese	164	156	153
Milk	5,863	5,705	5,322

* Provisional.

In 1956 there were 2,962,000 cattle, 2,332,000 hogs, 433,000 sheep and 210,000 horses. Large quantities of vegetables and fruits are raised for export.

Almost as important as the dairy industry is the raising of tulip, hyacinth and other flower bulbs in the area around Haarlem. Net value of agricultural and horticultural production in 1954-55 was 5,323,000,000 guilders.

Industry. The Netherlands is a highly industrialized nation, utilizing both overseas raw materials and domestic agricultural products. In 1956 there were about 10,970 larger industrial enterprises employing 1,004,500 workers with gross production valued at 26,700,000,000 guilders. Leading industries are textiles, clothing, shipbuilding, shoes, food, and building materials.

The Netherlands ranks high among the world's shipbuilding nations; 184 vessels of 600,642 gross tons were under construction on March 31, 1957. Production of pig iron in 1956 was 662,000 metric tons; of steel, 1,050,000 tons. Amsterdam is one of the world's diamond-cutting centers.

Trade. Trade statistics, in millions of guilders (excluding parcel post, specie and diamonds) are as follows:

	1954	1955	1956
Exports	9,058.9	10,211.0	10,874.6
Imports	10,688.1	12,188.9	14,105.2

Principal customers in 1956 were western Germany (18%), Belgium (14%), Britain (12%), the U. S. (6%) and France (5%). Leading suppliers were Belgium (19%), western Germany (18%), the U. S. (14%), Britain (8%) and France (3%). The chief exports were petroleum and coal-tar products (10%), dairy products and eggs (10%), electrical machinery and apparatus (6%) and fabrics and clothing (6%). Leading imports were machinery, iron and steel and manufactures, petroleum and products, cereals and flour and wood and manufactures.

Communications. The Dutch merchant marine had 1,797 seagoing vessels (100 tons and over) of 4,006,077 gross tons on June 30, 1956—the seventh largest fleet in the world. An extensive network of rivers expanded by many canals has led to extensive development of inland shipping. The length of navigable canals and rivers is almost 5,000 miles. River ships and barges numbered 15,380 on Jan. 1, 1957, with a total deadweight tonnage of 4,300,000. In 1956, 125,700,000 metric tons of freight were carried on rivers and canals. The wealth of water transport has obviated the need for wide railway development. In 1955, there were 2,850 miles of railway, all operated by a government-owned company, and, in 1954, 2,570 miles of primary highways.

The Royal Dutch Airlines (KLM), flew 39,371,000 miles on 106 routes in 1956 and carried 822,000 passengers.

Finance. Recent financial data are as follows (in millions of guilders):

	1954*	1955†	1956‡
Revenue	6,860	6,656	6,117
Expenditure	6,928	7,769	6,697

* Provisional. † Revised budget estimate. ‡ Preliminary budget estimate.

The national debt on Dec. 31, 1955, including debt to the Netherlands Bank and war damage obligations, totaled 19,689,000,000 guilders.

NATURAL FEATURES AND RESOURCES; CLIMATE. Part of the great plain of north and west Europe, the Netherlands has maximum dimensions of 190 by 160 miles and is low and flat except in Limburg in the southeast, where some hills rise to 300 feet. About half the country's area is below sea level, making the famous Dutch dikes a requisite to use of much land. Reclamation of land from the sea through dike-building has continued through recent times.

All drainage reaches the North Sea, and the principal rivers—Rhine, Maas (Meuse) and Schelde—have their sources outside the country. The Rhine is the most heavily used waterway in Europe.

Netherlands minerals are few. The only important ones are coal (11,836,000 metric tons in 1956), crude petroleum (7,678,000 barrels), lignite (270,000 tons) and salt. There also are peat swamps and about 600,000 acres of forest. The Netherlands fishing fleet made a catch of 263,700 metric tons valued at 102,200,000 guilders in 1956. Herring (115,900 tons) was the most important item.

Marsh mists, dense sea fogs and a humidity exceeding 80 per cent mark the Netherlands climate. Winters are colder than in eastern England at the same latitude. Utrecht, roughly central in location, has a January average temperature of 34.2° and a July average of 62.6°. Average rainfall for the country is about 28 inches. July–Sept. is the wettest period.

NETHERLANDS OVERSEAS TERRITORIES

NETHERLANDS ANTILLES—Status: Part of the United Kingdom of the Netherlands.

Area: 366 square miles.
Population (est. Dec. 31, 1955): 187,473.
Capital: Willemstad (est. 1953: 44,062).
Governor: F. E. J. van der Valk (acting).
Prime Minister: Ephraim Jonckheer.
Foreign trade (1956), exports, 1,585,000,000 florins; imports, 1,656,000,000 florins. Chief export: petroleum products (more than 95 per cent).

Agricultural products: aloes, beans, corn. Manufactures: refined petroleum, straw hats.

Mineral products: lime phosphate, salt.

This comprises two groups of Caribbean islands 500 miles apart; one, about 40 miles off the Venezuelan coast, consists of Curaçao (173 sq. mi.), Bonaire (95 sq. mi.) and Aruba (69 sq. mi.); the other, lying to the northeast, consists of 3 small islands with a total area of 29 square miles. The Dutch acquired the island of Curaçao from Spain in 1634 and have held it since, except for short intervals during the Napoleonic Wars.

The Governor is assisted by a local Legislature and Cabinet. The area has complete autonomy in domestic affairs.

The economy of the Netherlands Antilles is based almost entirely on the refining at Curaçao and Aruba of crude petroleum, which comes chiefly from the adjacent Maracaibo fields in Venezuela.

Dutch is the official language, but many inhabitants speak a patois known as Papiamentu, a mixture of Spanish, Dutch, English, Portuguese, native and other words.

The island of Curaçao has a torrid climate, with average temperatures of 79° in January and 83° in September. Rainfall is light, averaging only 16 inches annually. It occurs mostly in the October–January period.

SURINAM (Dutch Guiana)—Status: Part of the United Kingdom of the Netherlands.

Area: 55,143 square miles.
Population (est. 1956): 240,000.*
Capital: Paramaribo (pop. 1956: 95,000).
Governor: J. van Tilburg.

Prime Minister: J. H. E. Ferrier.
Foreign trade (1955): exports, 49,684,000 florins (70% to the U. S.); imports, 51,610,000 florins (33% from the U. S.). Chief export: bauxite (over 80%).

Agricultural products: rice (1955: 64,526 metric tons), sugar, coffee.

Minerals (1955): bauxite, 3,060,000 metric tons; gold, 7,235 troy oz.

Forest products: balata (1955: 183 metric tons), timber.

* Including aborigines, numbering about 26,000.

Surinam lies in northeastern South America between British and French Guiana. It was received by the Dutch from England at the Peace of Breda (1667) in exchange for New York and at that time included British Guiana, which was seized by England in 1803 and formally ceded to her at the conclusion of the Napoleonic Wars.

The Governor of Surinam (appointed by the Crown) is assisted by a local Legislature and Cabinet, which have sole responsibility in domestic affairs.

Mining is the most important activity, and only about 65,000 acres are devoted to agriculture. The largest bauxite mines are owned by Aluminum Company of America subsidiaries. In 1946 a company was formed to work 10,000,000 acres of the area's vast, but almost inaccessible, hardwood forests.

In 1950 the heterogeneous population included 2,850 Chinese, 22,000 Djukas (descendants of escaped slaves), 3,700 aboriginal Indians, 82,410 Negroes and mulattoes, as well as 95,000 Indian and East Indian laborers and their descendants, brought in after the abolition of slavery in 1863 to work the sugar plantations. The Dutch numbered fewer than 5,000.

From its settled coastal plain, Surinam runs back to a virtually unexplored mountain and jungle area along the Brazilian border. Rivers are the chief means of interior travel. The climate is tropical throughout but is modified by the northeast trade winds. Yearly range of temperature is approximately 70.5°-90°.

NETHERLANDS NEW GUINEA—Status: Part of the United Kingdom of the Netherlands.

Area: 160,618 square miles.
Population (est. 1955): 700,000.
Capital: Hollandia (pop. 1954: 11,322).
Governor: Jan van Baal.
Agricultural products: sago, coconuts, sugar cane, sweet potatoes.
Minerals: petroleum (1956: 2,618,430 barrels), nickel, chrome.

The western part of New Guinea, second largest island of the world, with smaller adjacent islands, forms part of the kingdom of the Netherlands. The area remained Dutch upon the transfer of sovereignty in Indonesia in Dec. 1949, with the understanding that its status would be determined within one year by negotiation between the Netherlands and Indonesia. Subsequent negotiations did not lead to any agreement.

Dutch influence dates back to the activities of the Dutch East India Company in the 17th century. In 1828, the Dutch government declared Northwest New Guinea part of the Dutch East Indian colonies, and the area was administered as part of the Netherlands Indies until 1949.

The Papuans are the dominant stock; there are also Melanesian and Negrito elements. There were approximately 10,000 Europeans and 13,000 Asiatics (chiefly Indonesians) in 1955. Production of petroleum began in 1948 at oilfields in the Vogelkop region (Berau Penin) on the western tip of the island. Except for this, commerce and industry are almost unknown and life is primitive, with head-hunting and cannibalism not unknown even today.

Nicaragua (Republic)

(República de Nicaragua)

Area: 57,143 square miles.*
Population (est. 1956): 1,282,000 (1943: mestizo, 69%; white, 17%; Negro, 9%; Indian, 5%).

Density per square mile (land only): 22.4.

President: Luis Somoza Debayle.

Principal cities (census 1950†): Managua, 109,352 (capital); León, 30,544 (trading center); Granada, 21,035 (trading center); Chinandega, 13,146 (sugar).

Monetary unit: Córdoba.

Language: Spanish.

Religion: Roman Catholic.

* Including inland water area of 3,475 square miles.

† Urban population of municipios.

HISTORY. Nicaragua was first visited by the Spaniards in 1522. The chief of the country's leading Indian tribe at that time was called Nicaragua, from whom the nation derived its name. The country was part of Spanish Guatemala until the general Central American revolution in 1821. Upon the dissolution of the Central American Union in 1838, Nicaragua established itself independently. A United States naval force intervened in 1909 after two American citizens had been executed, and a few U. S. Marines were kept in the country from 1912 to 1925. The Bryan-Chamorro Treaty of 1916 gave the United States an option on a canal route through Nicaragua, and naval bases in the Gulf of Fonseca on the Pacific coast and on Corn Islands on the Atlantic side. Disorder after the 1924 elections brought in U. S. Marines again, but they were withdrawn gradually after the U. S.-supervised elections of 1928.

General Anastasio Somoza was elected President in Dec. 1936 and ruled the country until Sept. 1956, when he was assassinated. His son, Luis, succeeded him.

GOVERNMENT AND DEFENSE. The Constitution of 1950 provides for a President popularly elected for six years, and a two-house Congress—a 42-member Chamber of Deputies and a 16-member Senate—both elected for six years. Former Presidents of the republic automatically become Senators. There are sixteen regional departments. Military service is voluntary. The Guardia Nacional, both an army and police force, numbers about 3,500. A naval base built at the Pacific port of Corinto by the U. S. during World War II was turned over to Nicaragua in 1946.

SOCIAL AND ECONOMIC CONDITIONS. Although primary education is free and compulsory, about 60 per cent of the people are illiterate. There is one university and several vocational schools. In 1953 there were 3,593 schools of all kinds with 123,832 pupils. Western Nicaragua, with about 75 per cent of the population, is inhabited principally by mestizos of Spanish and Indian blood, with some whites and Indians. Negroes and Indians are dominant in eastern Nicaragua.

More than half of Nicaragua is jungle-covered; agriculture, the leading industry, utilizes only 10 per cent of the total land. Coffee (production 1956-57 season: 350,000 bags of 132 lbs. each) is the chief crop and grows in the western part, which also produces sugar cane, cacao, sesame, beans, rice, tobacco and corn, the chief subsistence crop. Bananas lead in the eastern part, with cotton second. About 900,000 acres are devoted to livestock grazing. Except for some sugar refining, only locally consumed products are manufactured in Nicaragua.

Recent foreign trade data are as follows (in millions of U. S. dollars):

	1954	1955	1956 ¹
Exports*	62.8	79.9	65.1
Imports	58.3	69.6	68.8

* Including gold.

Chief exports in 1956 were cotton (36%), coffee (36%) and gold (12%). Leading customers were the U. S. (39%), Germany (23%) and the Netherlands (11%); leading suppliers, the U. S. (63%), Germany (7%) and the Netherlands Antilles (7%).

Recent public finance data are as follows (in millions of córdobas):

	1954-55*	1955-56*	1956-57*
Revenue	258.0	238.0	264.8
Expenditure	258.0	240.3	272.2

* Budget estimate.

NATURAL FEATURES AND RESOURCES; CLIMATE. Largest but most sparsely populated of the Central American nations, Nicaragua is mountainous in the west, with fertile valleys. A plateau slopes eastward toward the Caribbean.

Two big lakes—Nicaragua, about 100 miles long, and Managua, about 38 miles long—are connected by the Tipitapa River. The Pacific coast is bald and rocky; the Caribbean coast, swampy and indented, is aptly called the "Mosquito Coast."

Gold (production 1956: 217,140 troy oz.) and silver are the most important minerals. One-third wooded, Nicaragua produces mahogany, rosewood, cedar, rubber and ipecac root. In 1955, Nicaragua exported 37,347,000 bd. ft. of logs and lumber.

The highlands are generally cool, while the coasts are hot and sultry. The east coast receives up to 100 inches of rain a year. The wet season is generally from May or June through November or December.

Norway (Kingdom)

(Norge)

Area: 125,064 square miles.

Population (est. Dec. 31, 1956): 3,478,000 (Norwegian, 98.7%; Swedish, .8%; others, .5%).

Density per square mile: 27.7.

Sovereign: King Olaf V.

Prime Minister: Einar Gerhardsen.

Principal cities (est. 1956): Oslo, 455,000 (capital, chief port); (census 1950) Bergen, 112,845 (seaport, shipbuilding); Trondheim, 56,669 (seaport, timber, fish); Stavanger, 50,647 (seaport, fisheries).

Monetary unit: Krone.

Language: Norwegian.

Religions: Evangelical Lutheran (state), 96.8%; others, 3.2%.

HISTORY. Norwegians, akin to Swedes and Danes, are of Teutonic origin. In the 7th and 8th centuries, Vikings from Norway constantly attacked the British Isles,

and in the 9th century many of them settled in what are now Ireland and Normandy. Norway became a united kingdom in 872 under King Harald Haarfager. Christianity was introduced in the 10th century by King Olaf I.

Under the rule of Haakon IV (1217-63), Norway reached a peak of power, ruling the Shetland and Orkney Islands, Iceland, Greenland and the Hebrides. In 1319 Norway and Sweden were united under King Magnus VII, and in 1397 Denmark joined this union under Erik of Pomerania.

In 1450 the triple bond gave way to a union in which Norway was closer to Denmark, but the Treaty of Kiel, in 1814 at the end of the Napoleonic Wars, ceded Norway to Sweden. Norway protested and declared itself independent. Sweden thereupon invaded Norway and forced the issue, requiring Norway to recognize the King of Sweden but leaving Norway its own government, army, navy and customs.

After this union was dissolved in 1905, Prince Karl of Denmark was elected King of Norway by the Storting (parliament) and ascended the throne as Haakon VII. During World War I, Norway was able to preserve its neutrality, though it suffered greatly from the Allied blockade and from the loss of many merchant ships. In World War II, Norway was invaded by the Germans on April 9, 1940, and resisted for two months before Nazi control was complete. On June 7, King Haakon and the government fled to London and established a government-in-exile.

Meanwhile, in Norway, a new word was born—quisling. It was derived from Major Vidkun Quisling, a Norwegian traitor who collaborated with the Germans and who was Minister President of the German-sponsored occupation government. Quisling eventually was executed by the Norwegians in Oct. 1945.

King Haakon and the government returned immediately after the German collapse in May 1945, and an interim coalition Cabinet took over, headed by Einar Gerhardsen. The latter's Labor party won a majority in the general elections of Oct. 8, 1945, and an all-Labor Cabinet formed on Nov. 5, 1945, led the nation thereafter.

Despite Soviet pressure, Norway adhered to the North Atlantic Pact in April 1949.

RULER. Olaf V, born July 2, 1903, only son of Haakon VII and Princess Maud (1869-1938), third daughter of Edward VII of England, succeeded to the throne on the death of his father Sept. 20, 1957. He married Princess Märtha of Sweden (1901-1954) on March 21, 1929. Their children are Princess Ragnhild Alexandria (born 1930), Princess Astrid (born 1932) and Prince Harald (born 1937).

GOVERNMENT AND DEFENSE. Norway is a constitutional and hereditary monarchy with succession in the direct male line. The King's executive power is exercised by a Council of State, or Cabinet, consisting of the Prime Minister and at least seven other councillors. The 150 members of the Storting are popularly elected for a term of 4 years under proportional representation. When assembled, the Storting divides itself by election into two sections, the Lagting, composed of one-fourth of the members (38) and the Odelsting, composed of the rest. The Storting has a predominant position in the government since the Cabinet is responsible to it. Moreover, the King cannot dissolve it before the expiration of its term. There is universal suffrage for all citizens, male or female, over 23. Party representation in the Storting (elections of Oct. 12, 1953) is Labor 77; Conservative 27; Liberal 15; Agrarian 14; Christian People's 14; Communist 3.

The Department of Defense serves as a coordinating body for the army, navy and air force. The army is a national militia with compulsory service from 18 to 55. Army strength in 1955 was about 20,000. The navy in Dec. 1956 had 5 fleet destroyers, 8 submarines, 12 frigates and escort vessels and other minor ships.

SOCIAL AND ECONOMIC CONDITIONS. Education is compulsory and free from 7 to 14. Illiteracy is almost unknown. In 1952-53, elementary schools had enrollment of 355,655 and secondary schools had 46,296. There are 2 universities—Oslo (3,308 students in 1953) and Bergen (382).

Land suitable for cultivation, estimated at less than 5 per cent of the total area, consists of strips in the deep narrow valleys and around fiords and lakes. Food-stuff production is insufficient to meet domestic needs. Leading crops, with 1956 production in metric tons, are wheat, 56,000; barley, 288,000; oats, 167,000; potatoes, 1,406,000; hay and fodder. The country is more adapted to stock raising than to crop growing; in 1956, there were 1,111,812 cattle, 1,825,908 sheep, 506,597 hogs and 110,378 goats.

Raw materials produced in Norway form the basis of most of the manufactures. Leading industries are food, machinery, metals, wood, paper and electro-chemicals. On March 31, 1957, 79 vessels of 290,101 gross tons were under construction in Norwegian yards.

Statistics of foreign trade are as follows, in millions of kroner:

	1954	1955	1956
Exports	4,167	4,522	5,516
Imports	7,277	7,783	8,644

In 1956 the leading customers were Britain (19%), western Germany (12%), Sweden (10%) and the U. S. (9%). Leading

suppliers were Britain (19%), western Germany (18%), Sweden (14%) and the U. S. (10%). Chief exports were base metals (25%), fish and fish preparations (14%), pulp and waste paper (10%) and paper and manufactures (9%).

The normally adverse trade balance is offset to some extent by invisible exports, particularly the earnings of the large merchant marine.

Norway is one of the greatest seafaring nations and its merchant marine of 2,442 vessels (100 tons and over) of 8,035,340 gross tons (June 30, 1956) is the third largest in the world. The long Norwegian coast line and the difficulties of inland transportation make coastal shipping important. In 1954 there were 2,800 mi. of railway and 29,000 mi. of highway.

Recent public finance data are as follows, in millions of kroner:

	1955-56*	1956-57*	1957-58*
Revenue	4,577	5,114	5,479
Expenditure	4,577	5,114	5,514

* Budget estimate.

The public debt on Dec. 31, 1956, was 7,719,000,000 kr.

NATURAL FEATURES AND RESOURCES; CLIMATE. Nearly 70 per cent of Norway is uninhabitable and covered by mountains, glaciers, moors and rivers. Its extreme length from the Skagerrak to North Cape—Europe's most northerly point, far above the Arctic Circle—is about 1,100 miles. Breadth averages 60 miles, with a maximum of 260. The hundreds of deep fiords that cut into Norway's coast line give it an over-all ocean front of more than 12,000 miles. Islands off the coast, numbering almost 150,000, form a breakwater and make a safe coastal shipping channel. The Lofoten and Vesterålen Islands, off the northwest coast, have an area of about 1,560 square miles.

Mineral resources are extensive, but coal deposits are entirely lacking except in Spitsbergen. Important minerals (1956 production in metric tons): iron ore (metal content 65%), 1,550,000; aluminum, 92,700; pyrite ore, 850,000; zinc, 48,000; and copper ore, molybdenum ore, tungsten, antimony ore, tin, silver.

Cheap electric power, produced mainly by hydroelectric plants (production 1956: 23,376,000,000 kwh.), makes possible the extraction of nitrogen from the air and manufacture of potassium nitrate, an important fertilizer.

The forests, largely in the south and southeast, are one of the chief natural resources. About 25 per cent of the total area is covered with forests, of which 70 per cent is pine. Timber production in the 1955-56 season was about 8,500,000 cu. m. Production of paper and cardboard in 1955

was 596,000 metric tons; chemical pulp (1956), 594,685 tons; mechanical pulp (1956), 657,950 tons; pulpwood (1955-56), 4,150,000 cu. m.; newsprint (1955), 165,000 tons.

Fishing is one of the principal industries, engaging as many as 100,000 persons annually. A large number of the best European food fisheries are situated along the coast. The 1956 catch totaled 1,959,689 metric tons valued at 691,500,000 kr. Norwegians are the world's leading whalers and were the first to develop pelagic (open sea) whaling. Whale oil production in the 1955-56 season was 859,246 barrels.

The Gulf Stream affects the climate mildly. Summer temperatures range from about 50° in the extreme north to 60.6° at Oslo in July. February temperatures in Oslo average 24°, against 11° to -12° in the north. Norway is one of the lands of the midnight sun; in the extreme north for many weeks in the summer the sun never sets, and for an equal time in the winter the sun does not rise. Rainfall is heavy in the coastal regions but decreases sharply inland.

OUTLYING TERRITORIES

SPTSBERGEN (SVALBARD).

This arctic archipelago, with an area of 23,957 square miles, lies about 400 miles north of Norway and consists of West Spitsbergen (about 15,000 sq. mi.), North-East Land (about 6,000 sq. mi.), Edge Island (2,300 sq. mi.), Barents Island (580 sq. mi.), and several small islands including Bear Island. The group was probably discovered by Norwegians in A.D. 1194 and rediscovered by the Dutch navigator Barents in 1596. The question of sovereignty was long unsolved. By a treaty signed with the disputing nations on Feb. 9, 1920, however, Norwegian sovereignty was recognized, and Norway declared the area a part of the kingdom Aug. 14, 1925. Spitsbergen was occupied by Allied forces in the summer of 1941. Soviet proposals for establishment of joint military bases were rejected by Norway in Feb. 1947.

In the 18th and 19th centuries, Spitsbergen was a whaling center, but now the only important product is coal, which is mined by both Norwegians and Russians (1956 Norwegian production: 390,000 metric tons). Population (1952-53) 3,257, largely miners, none indigenous.

JAN MAYEN ISLAND.

This arctic island (144 sq. mi.), lying between Greenland and the north of Norway, was discovered by Henry Hudson in 1607. It was annexed to Norway May 8, 1929. A Norwegian weather station was established in 1921, and during World War II a U. S. Navy weather station was maintained on the island. It is otherwise uninhabited.

OTHER TERRITORIES. Norway also exercises sovereignty over Bouvet Island (22 sq. mi.) in the South Atlantic, Peter I Island (94 sq. mi.) in the Antarctic Ocean, and that part of the Antarctic continent lying between 20 degrees and 45 degrees east. All are uninhabited.

Outer Mongolia. See Mongolian People's Republic

Palestine. See Israel; Jordan

Panamá (Republic) (República de Panamá)

Area: 28,753 square miles.

Population (est. July 1, 1956): 934,000 (1940: mestizo, 65.34%; Negro, 13.31%; white, 11.07%; Indian, 9.53%; others, 75%).

Density per square mile: 32.5.

President: Ernesto de la Guardia, Jr.

Principal cities (census 1950): Panamá City, 127,874 (capital and chief port); Colón, 52,204 (chief Caribbean port); Ciudad David, 14,847 (bananas).

Monetary unit: Balboa.

Language: Spanish (official).

Religion: Roman Catholic, 93%; Protestant, 6%; others, 1%.

HISTORY. Visited by Columbus in 1502 on his fourth voyage and explored by Balboa in 1513, Panamá was the principal transshipment point for Spanish treasure and supplies to and from South and Central America in colonial days. In 1821, when Central America revolted against Spain, Panamá joined Colombia, which already had declared its independence. For the next 82 years, Panamá attempted unsuccessfully to break away from Colombia. After U. S. proposals for canal rights over the narrow isthmus had been rejected by the Colombian Senate, Panamá proclaimed its independence with U. S. backing in 1903. U. S. Marines restrained Colombian intervention.

For canal rights in perpetuity, the United States paid Panamá \$10,000,000, and agreed to pay \$250,000 each year, increased to \$430,000 after devaluation of the U. S. dollar in 1933 and to \$1,930,000 under a revised treaty signed Jan. 25, 1955. In exchange, the United States got the Canal Zone, a ten-mile-wide strip across the isthmus, and a considerable degree of influence in Panamá's affairs.

During World War II the U. S. was granted the right to establish a number of bases in Panamá. All were evacuated in 1948 after the Assembly rejected a 10-year lease agreement on Dec. 22, 1947.

GOVERNMENT. Under the 1946 Constitution, the Assembly and the President are

elected for 4-year terms, with the President ineligible to succeed himself. Panamá has no army or navy, but has a national police corps numbering 2,000.

SOCIAL AND ECONOMIC CONDITIONS. Although education is free and compulsory between 7 and 15, 28.2% of the population 10 years of age and over (excluding tribal Indians) could not read and write in 1950. In the year 1954-55 there were 1,081 public and private primary schools with enrollment of 132,743; post-primary students numbered 23,783 and the national university at Panamá City had 1,955 students.

About five-eighths of the nation is unoccupied. A fourth of the population is in Colón and in Panamá City, the oldest white settlement on the Pacific coast of the Americas. In the cities, the lower classes are Negro and Negroid, descendants of British West Indian laborers on the canal.

Bananas are the main agricultural crop; others are cacao, tobacco, abacá, rubber, rice, coffee and sugar cane, all of which are exported, as are cattle, hides and gold. Imports in 1955 were \$75,684,653; domestic exports, \$19,281,795; re-exports, \$2,397,128. Chief exports were bananas (64%) and fresh shrimp (14%). The U. S. was the leading customer (94%) and supplier (60%).

The Panama Canal is the country's biggest economic asset. About a third of the national income is ordinarily derived from the wages of Panamanians working in the Canal Zone, or from cash spent by U. S. personnel in the Zone.

The main railway is the U. S. Government-owned Panamá Railroad, 47.64 miles long, bridging the isthmus from Panamá City to Colón. In recent years many foreign ships have been registered in Panamá to escape high labor costs and governmental regulations in other nations; in 1956, the merchant marine consisted of 556 vessels (100 tons and over) of 3,925,751 gross tons, making it one of the largest in the world.

NATURAL FEATURES; CLIMATE. Panamá, roughly the size of South Carolina, runs east to west for 420 miles from Costa Rica to Colombia, and has a maximum width of 118 miles, with 477 miles of Caribbean coast and 767 on the Pacific. At the narrowest and lowest point, the canal bisects the country. Outlying islands number about 630 in the Caribbean and 116 in the Pacific. Panamá steps up from coastal lowlands, with extremely heavy rainfall (150 inches or more), to upland valleys and plateaus covered by dense forest and a few mountain peaks, some volcanic, near the Costa Rican border.

Paraguay (Republic) (República del Paraguay)

Area: 157,047 square miles.

Population (est. 1956): 1,601,000 (1950: mestizo, 94.9%; white, 3.0%; Indian, 2.1%).

Density per square mile: 10.2.

President: Gen. Alfredo Stroessner.

Principal cities (census 1950): Asunción, 201,340 (capital); Villarrica, 14,680 (sugar, tobacco); Concepción, 14,640 (port, Paraguay river); Encarnación, 13,321 (rail terminus).

Monetary unit: Guaraní.

Languages: Spanish (official), Guaraní.

Religion: Roman Catholic (official).

HISTORY. Paraguay, a landlocked South American country with a good river outlet to the South Atlantic, is about the size of Montana and, more often than not, is under the rule of a dictator-president.

In 1526 and again in 1529, Sebastian Cabot explored the area when he sailed up the Paraná and Paraguay Rivers. Domingo Martínez de Irala, a Spaniard, founded Asunción in 1537 and became the dominant figure in Paraguay for the next two decades. From 1608 until their expulsion from the Spanish dominions in 1767, the Jesuits maintained an extensive establishment in the south and east of Paraguay. In 1811 Paraguay revolted against Spanish rule and became a nominal republic under two Consuls, one of whom, Dr. José Rodríguez Francia, ruled as absolute dictator until his death in 1840. His dictator successor, Carlos Antonio López, was succeeded in 1862 by his son, Francisco Solano López, under whose leadership Paraguay lost a good part of its population in a disastrous five-year war with Argentina, Brazil and Uruguay.

Paraguay remained neutral in World War I. Economic and financial exhaustion resulted from the war with Bolivia (1932-35), after which Paraguay was awarded three-fourths of the disputed Gran Chaco region (1938).

Juan Natalicio González, elected President in the Feb. 1948 elections, took office Aug. 15, but successive revolts on Jan. 30 and Feb. 26, 1949, ousted him and his successor. The leader of the latter revolt, Felipe Molas López, was elected President on Apr. 17, but gave way to Federico Chaves on Sept. 11, 1949. Chaves was re-elected Feb. 15, 1953, but was ousted by the army on May 5, 1954, and on July 11 Gen. Alfredo Stroessner was elected to complete his term.

GOVERNMENT AND DEFENSE. Since adoption of the 1940 Constitution, Paraguay has been a semi-authoritarian republic which elects a President every five years by popular vote, and a one-house Congress on a population basis. There is also a Council of State, somewhat equivalent to an upper house, its members named

by the government. The presidentially-appointed Cabinet administers the government and is required merely to inform the Congress and Council of its policy.

The army numbers approximately 6,000. Military service is compulsory for two years. For patrolling the Paraguay River, the country's life line, there is a navy of about 1,400 men with two gunboats and three armed patrol boats.

SOCIAL AND ECONOMIC CONDITIONS. The illiteracy rate is unofficially estimated at 60 per cent, one of the highest in South America. Education is free and in theory compulsory. In 1953 there were 252,393 pupils attending 1,794 elementary schools. The University of Paraguay at Asunción had 2,100 students in 1953, and there are several normal and agricultural schools.

The Paraguayans are a homogeneous blend of Spanish, Portuguese and Italian, with considerable Guaraní Indian blood. There are almost no Negroes; the 35,000 to 50,000 uncivilized Indians live mainly in the Chaco. The country is 90 per cent bilingual, with Guaraní dominating over Spanish (the official language) in rural areas.

A well-favored land, Paraguay is predominantly a cattle country, keeping about 3,500,000 head. The soil is fertile and the climate suitable for subtropical crops. The chief cash crop is cotton (production 1955-56: 45,000 bales of 500 lb. each); the staple food crop is manioc. Other crops are rice, maize, yerba maté, tobacco, sugar, peanuts and fruits. Oil of petit-grain, an important perfume ingredient, is extracted from the leaves of the bitter orange.

Foreign trade data are as follows (in millions of U. S. dollars):

	1954	1955	1956
Exports	33.97	35.10	36.69
Imports	32.88	28.96	24.63

Chief exports in 1956 were timber (32%), quebracho extract (18%) and cotton (15%). Principal customers and suppliers in 1955 were Argentina, the U. S. and Britain.

Railway mileage is about 700. In 1956 there were some 625 mi. of modern highways. Domestic air service is furnished by the nationalized Línea Aérea de Transporte Nacional (LATN). Several foreign lines supply international service.

NATURAL FEATURES AND RESOURCES; CLIMATE. Eastern Paraguay, between the Paraná and Paraguay Rivers, is upland country with the thickest population settled on the grassy slope that inclines toward the Paraguay River. The greater part of the Chaco region, to the west, is covered with marshes, lagoons, dense tropical forest and jungle.

Forest resources are considerable, especially in the Chaco. Quebracho—the

"Axe-breaker," a wood so heavy that it will not float—is the principal commercial tree. The wood has many uses, from paving blocks to ox-cart wheels. Quebracho tannic extract is the chief product. Its export is limited by agreement with Argentina.

In the east, temperature averages about 81° in summer (December-February) and 64° in winter (May-August). From Asunción, with an annual average greater than 60 inches, the rainfall decreases in the west.

Peru (Republic)

(República del Perú)

Area: 482,258 square miles.

Population (est. 1956): 9,651,000 (white and mestizo, 53%; Indian, 46%; Asiatic, Negro and others, 1%).

Density per square mile: 20.0.

President: Manuel Prado y Ugarteche.

Principal cities (est. Dec. 31, 1952): Lima, 926,400 (capital); Callao, 104,500 (port of Lima); Arequipa, 100,900 (commercial center); Cuzco, 58,200 (ancient Incan capital); Trujillo, 49,600 (mining).

Monetary unit: Sol.

Languages: Spanish, Quéchua, Aymará (Indian).

Religion: Roman Catholic.

HISTORY. Peru, once part of the great Incan empire and later the major viceroyalty of Spanish South America, is more than three times the size of California. It was conquered in 1531-33 by Francisco Pizarro. On July 28, 1821, Peru proclaimed its independence, but the Spanish were not finally defeated until the Battle of Ayacucho on Dec. 9, 1824. For a hundred years thereafter the Peruvian course was rough. Revolutions were frequent, and a new war was fought with Spain in 1864-66. The dispute with Chile over Tacna and Arica was not finally settled until 1929.

Peru emerged from 20 years of dictatorship on July 28, 1945, with the inauguration of President José Luis Bustamante y Rivero after the first free election in many years had been held. In a Cabinet reorganization of Jan. 12, 1947, three members of the leftist APRA party, which had contributed largely to Bustamante's election, were eliminated. The rightist-APRA cleavage came to a head on Oct. 28, 1948, when an army-led rightist revolt headed by Gen. Manuel A. Odría ousted Bustamante. Odría was unopposed in presidential elections held July 2, 1950. Conservative Manuel Prado y Ugarteche, President from 1939 to 1945, was chosen by a narrow margin to succeed him in elections held June 22, 1956.

GOVERNMENT AND DEFENSE. Under the 1933 Constitution, Peru elects by popular vote every six years a President, two Vice-Presidents and a bicameral Congress—a Senate of 52 members and a Chamber of

183 members. The President is ineligible to succeed himself. The Cabinet, headed by the Prime Minister, is presidentially appointed.

Military service is compulsory at the age of eighteen. The authorized strength of the army is 32,000. The navy in 1956 had 6 frigates and escort craft, 6 submarines and other smaller units. There are about 10,000 police and civil guards.

SOCIAL AND ECONOMIC CONDITIONS. Peru, once the cultural center of Spanish South America, has an illiteracy rate of over 50 per cent. Education between 7 and 16 is free, compulsory and state-controlled. Public and private primary schools numbered 11,743 in 1954 with 1,039,455 pupils; 325 state and private secondary schools had 87,423 students. Five universities had 13,521 students in 1952, including the University of San Marcos, founded in 1551 (oldest in America) with 8,771.

Most Peruvians are of mixed Spanish and Indian blood. The Indians come from three main stocks—Quéchua, Aymará (Colla) and Chuncho. There is a relatively large Asiatic population.

Land under cultivation is estimated at only slightly more than 10 per cent of the total area, with more than 80 per cent of the population being dependent upon agriculture. About one-eighth of the cultivated area in the irrigated coastal valleys of the central region is devoted to cotton, the most important crop (1956-57 production: 110,000 metric tons). Sugar (1956-57: 730,000 tons), rice, tobacco and coffee are exported, while wheat, corn, potatoes, beans, barley and quinoa (a grain similar to millet) are subsistence crops. Stock-raising, pursued in the Pacific highlands and the elevated parts of the Amazon slope, supplies most of the country's meat needs, as well as wool, hides and skins for export. Llamas, used as beasts of burden, and vicuñas and alpacas, noted for their wool, are native to Peru. Livestock estimates in Dec. 1955 showed 3,439,000 cattle, 16,505,000 sheep, 1,341,000 hogs and 3,380,000 alpacas and llamas (1952).

Industrialization has been slow. Aside from the copper smelters and oil refineries, the greatest progress has been made in the textile industry, which obtains its raw materials from domestic cotton and wool and from imported silk.

Foreign trade statistics, in millions of soles, are as follows:

	1954	1955	1956
Exports	4,792	5,146	5,917
Imports	4,916	5,764	6,934

Chief exports in 1956 were cotton (28%), sugar (11%), copper (11%) and lead (10%). Chief suppliers were the U. S. (50%), western Germany (10%) and Britain (9%); chief customers, the U. S.

(37%), Britain (11%) and Chile (9%). Principal Peruvian imports are machinery and motor vehicles, foodstuffs (especially wheat), iron and steel manufactures, electrical goods and chemicals.

Highway mileage in 1951 totaled 19,500, of which more than a third is hard-surfaced; the Pan-American highway had a total Peruvian length of 1,818 miles. Railway mileage (1951) was 2,800.

NATURAL FEATURES AND RESOURCES; CLIMATE. The Andes Mountains divide Peru into three sharply differentiated zones. To the west is the coastland, much of it arid, extending for 50 to 100 miles inland, and 1,400 miles long.

The mountain area, with peaks over 20,000 feet high, lofty plateaus and deep valleys, lies centrally. Beyond the mountains to the east is the heavily forested slope leading to the Amazonian plains.

Peru has vast mineral resources. It ranks fifth in world silver production and mines about 25 per cent of the world's vanadium. But mining is second to agriculture, and nearly all of it is in the hands of foreign capital. Petroleum and copper are the most important, with the latter controlled by the American-owned Cerro de Pasco Corporation, which also accounts for much of the gold and silver output. In 1956, gold production was 194,849 oz.; silver, 21,833,000 oz.; copper (smelter), 35,005 short tons; lead, 66,546 tons; zinc (in ore), 176,584 tons; iron ore (metal content 60%), 2,960,000 tons. Petroleum production in 1956 was 18,360,000 barrels; discovery of rich new deposits has been reported.

Forest products include rubber (1953: 3,311 metric tons), balata, raw quinine, vegetable ivory, mahogany, cedar, dye woods and coca, the source of cocaine. An important industry on the outlying islands is the gathering of guano (bird excrement), a valuable fertilizer used almost entirely domestically.

The climate ranges from tropical in the eastern lowlands to arctic among the snow-capped peaks. The coastal area has an average annual rainfall of less than 2 inches and temperatures ranging between 55° and 98°. Temperatures range from 75° to 95° in the humid Montaña, and rainfall between 75 and 125 inches annually.

The Philippines (Republic)

Area: 114,830 square miles.

Population (est. Dec. 31, 1956): 22,056,100 (Filipino, except [1948] 121,702 Chinese, 6,955 Americans, 1,886 Spanish and 3,319 others).

Density per square mile: 192.1.

President: Carlos P. Garcia.

Principal cities (est. 1952): Manila, 1,158,260 (seat of government, chief port); Cebu, 175,950 (seaport); Quezon City, 159,730 (legal, future capital); Basilan, 141,640 (lumber); Bacolod 126,200 (sugar); Zamboanga, 124,710 (seaport).

Monetary unit: Peso.

Languages: English, Tagalog, Bisayan, Spanish, Ilocano, Bicol.

Religions (census 1948): Roman Catholic, 82.9%; Aglipayan (Independent Philippine Catholic), 7.6%; Moslem, 4.1%; Protestant, 2.3%; others, 3.1%.

HISTORY. Fernando Magellan, the Portuguese navigator in the service of Spain, discovered the Philippines on March 16, 1521, and 21 years later a Spanish exploration party named the group of islands in honor of Prince Philip, later Philip II of Spain. Spain retained possession of the islands for the next 350 years.

The Philippines were ceded to the United States in 1899 by the Treaty of Paris after the Spanish-American War. Meanwhile the Filipinos, led by Emilio Aguinaldo, had declared their independence. They continued guerrilla warfare against U. S. troops until the capture of Aguinaldo in March 1901. By July 1902, peace was established except among the Moros.

The first U. S. civilian Governor-General was William Howard Taft (1901-04). The Jones Law (1916) provided for the establishment of a Philippine Legislature composed of an elective Senate and House of Representatives. The Tydings-McDuffie Act (1934) provided for complete Philippine independence in 1946. Under a Constitution approved by the people of the Philippines May 14, 1935, the Commonwealth of the Philippines was inaugurated on Nov. 15 under the presidency of Manuel Quezon y Molina, who was re-elected in 1941.

The Philippines were invaded by Japanese troops on Dec. 8, 1941 (Philippine time), and after the fall of Bataan and Corregidor, President Quezon and his government fled to Washington, D.C. U. S. forces led by Gen. Douglas MacArthur re-invaded the islands in Oct. 1944, and after the liberation of Manila (Feb. 1945), Sergio Osmeña, who had succeeded to the presidency on the death of Quezon (Aug. 1, 1944), re-established the government.

Brig. Gen. Manuel A. Roxas y Acuña, who defeated Osmeña in the elections of April 1946, became first head of the new independent republic, which came into existence on July 4, 1946, as scheduled in the Tydings-McDuffie Act. He died April 15, 1948, and was succeeded by the Vice President, Elpidio Quirino. The latter was re-elected on Nov. 8, 1949, but lost a second bid for re-election to Ramón Magsaysay, who took office on Dec. 30, 1953. On his death in a plane crash March 17, 1957, Magsaysay was succeeded by Vice-Pres. Carlos P. Garcia.

GOVERNMENT AND DEFENSE. Under the Constitution of 1935 (as amended in 1940), the Philippines have a republican form of government based on that of the United States. Executive power is exercised by the President, popularly elected for a 4-year term and assisted by a Cabinet appointed by him. The popularly elected Congress has two houses—the Senate with 24 members and the House of Representatives with 100 members.

The Philippine army has been reorganized and re-equipped with U. S. assistance. An agreement signed March 14, 1947, provided for the establishment, for a 99-year period, of 23 U. S. military, naval and air bases in the islands. A mutual defense treaty with the U. S. was signed Aug. 30, 1951.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Education is free. The illiteracy rate (10 years and over) was 30% in 1952. In 1955 there were 26,576 elementary schools with 4,156,000 pupils and 1,620 secondary schools with 647,000 pupils. The state-supported University of the Philippines had 12,028 students in 1953-54. Tagalog is the national language but English and Spanish are used throughout the country.

Agriculture and Industry. Agriculture is the chief industry. Average size of the farms is 10 acres, but there are many large plantations. Rice (palay) is the staple native food cereal, but production (3,400,000 metric tons in 1956-57) is insufficient to meet home consumption. The Philippines normally produce about half the world copra supply and a large proportion of the abacá (Manila hemp) supply; they are also a leading source of sugar (1956-57: 1,100,000 metric tons, raw) and sugar products, normally the chief export. Other crops include sisal, kapok, cotton, corn, tobacco, coffee, rubber, cacao, citrus fruits and bananas. In the crop year 1955-56, 1,140,000 metric tons of copra, 38,400 tons of tobacco and 120,300 tons of abacá were produced. Livestock on March 31, 1956, included 3,590,580 carabao, the farmers' all-purpose animal, 836,080 cattle, 214,140 horses and 5,765,370 hogs.

There are no large industrial establishments and activity is limited primarily to the processing of agricultural and forest products, such as sugar cane, coconuts, tobacco, abacá and timber. Preparation of fine embroideries is an important industry.

Foreign Trade. Statistics of trade, in millions of pesos, are as follows:

	1954	1955	1956
Exports	792	779	902
Imports	974	1,095	1,013

In 1956, the chief exports were copra and other coconut products (39%), sugar (22%), wood (11%) and abacá (8%). Leading customers were the U. S. (54%),

Japan (18%) and the Netherlands (9%); leading suppliers, the U. S. (59%), Japan (10%) and Indonesia (4%). Leading imports were machinery and vehicles, cotton and manufactures, iron and steel, and petroleum and products.

Finance. Recent data are as follows (in millions of pesos):

	1955-56	1956-57*	1957-58†
Revenue	736.2	748.9	846.4
Expenditure	734.4	748.7	845.6

* Revised budget estimate. † Initial budget estimate.

The total public debt on June 30, 1957, was 1,636,629,665 pesos.

Communication. The inter-island trade—extremely important because of the makeup of the archipelago—is served by vessels licensed for domestic, coastwise and bay and river traffic. The port of Manila has ample facilities for ocean-going vessels. According to *Lloyd's Register*, the merchant marine had 91 vessels (100 tons and over) of 133,621 gross tons in 1956.

Railway mileage in 1956 totaled 690, most of which was on Luzon. Highways totaled 19,550 mi. in 1955. Domestic lines flew 5,221,208 mi. and carried 369,718 passengers in 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. The Philippines are an archipelago of approximately 7,083 islands lying about 500 miles off the southeast coast of Asia. The northernmost island, Y'Ami, is 65 miles from Formosa, while the southernmost, Saluag, is 30 miles east of Borneo. Only 466 of the islands have an area of more than one square mile, and only 2,441 have names. The largest islands are Luzon in the north (40,814 sq. mi.), Mindanao in the south (36,537 sq. mi.), Samar (5,124 sq. mi.), Negros (4,903 sq. mi.), and Palawan (4,550 sq. mi.).

Minerals, Forests and Fisheries. The Philippines possess large but relatively undeveloped mineral resources. Most important are gold, silver, iron ore, copper ore, chromite, manganese ore, lead and zinc. Petroleum formations are also known to exist. In 1956, 406,163 ounces of gold, 541,168 ounces of silver, 26,963 metric tons of copper concentrates, 709,055 tons of chromite, 1,440,232 tons of iron ore (metal content 55%), 151,708 tons of coal, 4,414 tons of manganese and 2,140 tons of lead were mined.

The forest area is estimated at more than 43,700,000 acres (about 58 per cent of the total area), not including 3,200,000 acres covered with cogón grass, fit for grazing. About 97.5 per cent of the total forest area is government-owned. Lumber production totaled 378,936,006 bd. ft. in 1956; timber, 4,301,353 cu.m.

Climate. The temperature is warm throughout the year, averaging 80°, with only slight variations. Rainfall averages about 90-100 inches annually, with the wettest season occurring from June or July through October. Typhoons, often causing severe damage, originate in the Pacific and strike the islands from the east and southeast before curving north.

Poland (People's Republic)

(Polska Rzeczpospolita Ludowa)

Area: 120,442 square miles.

Population (est. Mar. 31, 1956): 27,680,000.

Density per square mile: 229.8.

Chairman of State Council: Aleksander Zawadski.

Premier: Josef Cyrankiewicz.

Principal cities (est. 1955): Warsaw, 965,000 (capital); Łódź, 670,000 (industrial center); Wrocław (Breslau), 490,000 (former German industrial center); Kraków, 430,000 (commercial center); Poznań, 370,000 (farm products).

Monetary unit: Złoty.

Language: Polish (more than 90%).

Religions: Roman Catholic, Jewish, Protestant.

HISTORY. Little of certainty is known about Polish history before the 11th century. Early in that century the Polish King, Boleslaus I (the Brave), ruled over Bohemia, Saxony and Moravia. Mongol invasions in 1241 and 1259 were repelled with accompanying devastation. Meanwhile, the Teutonic Knights were erecting in Prussia a state which included part of Poland and barred the latter's access to the Baltic. The Knights were defeated by Wladislaus II (1386-1434) at Tannenberg in 1410 and became Polish vassals under the Peace of Thorn (1466), by which Poland regained a Baltic shoreline.

Poland reached the peak of its power between the 14th and 16th centuries. The 16th century was marked by a constant growth of power on the part of the lesser nobility with a corresponding weakening of the Crown, which became elective in 1572. In succeeding years, Poles scored many military successes against the Russians and Turks. In 1683, King John Sobieski, a famous military leader, turned back the Turkish tide near Vienna.

These successes did not halt the process of decline which resulted from the lack of strong central authority, and Prussia, Russia and Austria were able to carry out a first partition of the country in 1772, a second in 1792 and a third in 1795-96. For more than a century thereafter, there was no Polish state, but the Poles never ceased their efforts to regain their independence. World War I found them fighting unhappily on both sides.

The independence of Poland was formally proclaimed in Nov. 1918, and Marshal

Josef Pilsudski was confirmed in office as President. In 1919, Ignace Paderewski, famous pianist and patriot, became the first Premier. Russia attacked Poland in 1920 but the Poles, under Marshal Pilsudski and aided by the French, defeated the invaders. On May 12, 1926, Marshal Pilsudski seized complete power in a *coup d'état* and ruled the country dictatorially until his death on May 12, 1935, when he was succeeded by Marshal Edward Smigly-Rydz.

Despite a 10-year nonaggression pact signed with Germany in 1934, Hitler attacked Poland on Sept. 1, 1939. Russian troops invaded from the east Sept. 17, 1939, and on Sept. 28 a German-Russian agreement was signed dividing Poland between Russia and Germany. W. Raczewicz formed a government-in-exile in France with Gen. Wladyslaw Sikorski as Premier; this government moved to London after France's defeat in 1940.

All of Poland was occupied by Germany after the Nazi attack on the Soviet Union in June 1941. On July 30, 1941, Poland concluded an agreement with the U.S.S.R. voiding all German-Soviet agreements effected after Sept. 1, 1939.

The legal Polish government soon fell out with the Russians, however, and in July 1944, a Communist-dominated Polish Committee of National Liberation received Soviet recognition. Moving to Lublin after that city's liberation, it proclaimed itself the Provisional Government of Poland on Dec. 31, 1944. Some former members of the Polish Government in London joined with the Lublin government to form the Polish Government of National Unity on June 28, 1945. Great Britain and the U. S. recognized this government on July 5, 1945.

On Aug. 2, 1945, in Berlin, Prime Minister Attlee, President Truman and Generalissimo Stalin established a new *de facto* western frontier for Poland, along the rivers Oder and Lausitzer Neisse, pending a final peace treaty. On Aug. 16 the Soviet Union and Poland signed a treaty delimiting the Soviet-Polish frontier. Under these agreements Poland was shifted westward. In the east it lost 69,860 square miles with 10,772,000 inhabitants; in the west it gained (subject to final peace conference approval) 38,986 square miles with a pre-war population of 8,621,000.

Democratic participation was negligible in the new government, which had adhered strictly to Soviet foreign policy and pursued a program of internal socialization. The government bloc controlled by the small Communist minority won a sweeping victory in the Jan. 1947 elections, which gave little opportunity to the opposition for campaigning or voting. In Nov. 1952, Aleksander Zawadzki was elected Chairman of the State Council under the new Constitution, and former President Boleslaw

Bierut was elected Premier. On March 19, 1954, he yielded to Josef Cyrankiewicz, who was Premier from 1947 to 1952, and became First Secretary of the Polish Communist party. A short-lived rebellion of workers at Poznan in June 1956 was speedily quelled. The Polish Communist Party asserted its independence of Soviet domination in Oct. 1956, and Wladyslaw Gomulka became first secretary.

GOVERNMENT AND DEFENSE. The 1952 Constitution is based on that of the U.S.S.R. The supreme organ of state authority is the Sejm, composed of 425 members elected for 4 years by all citizens over 18. It elects a State Council to act when it is not in session and also elects the Council of Ministers, headed by the Premier, which is the supreme executive and administrative organ. All the Sejm's members belong to the Communist-controlled National Front.

Poland's armed forces in 1956 numbered about 370,000, including security and frontier defense forces. The navy in 1956 had 2 destroyers, 4 submarines and some minesweepers and coastal craft.

SOCIAL AND ECONOMIC CONDITIONS. *Education.* In 1954-55 there were 23,103 primary schools with about 3,202,700 pupils. Secondary schools numbered 792 with 195,100 pupils. The 84 institutions of higher learning, including 8 universities, had 143,300 students. Education is free and compulsory up to 14.

Agriculture. Poland remains essentially an agricultural country: the areas now under *de facto* Polish administration in the west accounted for 25 per cent of Germany's pre-war food production. Farm lands lost to the Soviet Union were considerably larger in area than those gained from Germany.

Official production data are as follows (in thousands of metric tons):

	1954	1955	1956
Wheat	2,002	2,134	2,121
Rye	5,844	7,003	6,536
Oats	2,073	2,287	.....
Potatoes	35,662	26,400	.....
Sugar beets	6,950	7,286	.....

In 1955 there were 7,912,200 cattle, 10,888,300 hogs and 4,243,200 sheep.

Industry. Industrial facilities, although severely damaged during World War II, were not greatly affected by territorial concessions to the U.S.S.R., with the exception of the Lwów area. On the other hand, important German industrial areas, especially Silesia and the city of Stettin, are located in the territories under *de facto* Polish administration. As a result, post-war Poland has a much larger industrial potential. Almost all industries have been nationalized or placed under state control, and a planned economy has been introduced as part of the government's drive to make Poland an industrial nation.

Official production figures are as follows (in thousands of metric tons):

	1954	1955	1956
Pig iron	2,663	3,112	3,504
Raw steel	3,949	4,427	5,016
Cotton yarn	109	114	116
Cement	3,403	3,813	4,032
Electric energy	15,469*	17,745*	19,488*

* Millions of kw.h.

Trade. Foreign trade is largely conducted by government bodies under the terms of numerous trade agreements with other nations. According to estimates of the U. N. Economic Commission for Europe, total trade (imports and exports) amounted to \$1,770,000,000 in 1954, including \$1,220,000,000 with nations of the Communist bloc. Major exports were coal and coke, other raw materials and semi-manufactures and agricultural products (mainly bacon and ham). Major imports were machinery, textiles, chemicals and mineral products.

Finance. The 1956 budget estimated revenue at 141,300,000,000 zlotys and expenditure at 137,700,000,000 zlotys.

Communications. The merchant marine had 150 vessels (100 tons and over) of 336,813 gross tons on June 30, 1956. The principal ports are Gdynia, with one of the largest harbors in Europe, Gdansk (Danzig) and the former German port of Stettin. There are about 61,000 miles of public highway, 4,800 miles of inland waterways and 14,350 miles of railway.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of Poland is a plain with no natural boundaries except the Carpathian Mountains on the south and the Oder and Neisse Rivers on the west. The central Polish plain, 300 to 450 feet above sea level and intersected by great rivers, lies south of the flat country along the Baltic shore.

The acquisition of large coal deposits in German Silesia (estimated at more than 5,000,000,000 tons), combined with much larger reserves in the southwestern region, makes Poland one of the world's leading coal producers. The 1956 output was 95,148,000 metric tons, a third of which was produced in former German territory. Iron ore deposits are located in the Kielce and Radom districts and in German Silesia (metal content 34%). Production in 1956 was 1,963,000 tons. Zinc and lead ores are located chiefly in Upper Silesia and the voivodships of Kielce and Kraków. Prewar Poland's principal oil-producing areas, Boryslaw-Drohobycz, are in the territory ceded to the Soviet Union; 1956 production was about 1,285,000 barrels (one-third of prewar). Among other deposits, Poland possesses copper, sulfur, chalk, clay, kaolin, marble and granite.

Forests cover 22 per cent of the land, but important wood resources are located in the territory ceded to the Soviet Union.

Poland's climate is dependent upon her proximity to the Baltic and to the Carpathian Mountains. Abundant rainfall (annual average: 22.8 in.) is caused by the predominating western oceanic winds. Snowfall is not heavy, but temperatures below zero are not uncommon, and the rivers are icebound for part of each year.

Portugal (Republic) (República Portuguesa)

Area: 35,358 square miles.

Population (est. 1956): 8,837,000 (practically all Portuguese).

Density per square mile: 249.9.

President: Gen. Francisco Higinio Craveiro Lopes.

Premier: António de Oliveira Salazar.

Principal cities (census 1950): Lisbon, 783,226 (capital, seaport); Oporto, 281,406 (seaport, port wine); Setúbal, 44,235 (seaport, sardines); Coimbra, 41,977 (university); Funchal (in Madeira Islands), 37,035 (Madeira wine).

Monetary unit: Escudo.

Language: Portuguese.

Religion: Roman Catholic.

HISTORY. Rolling and rugged Portugal is about the size of Indiana and, thanks to the days when its sailors and explorers were among the world's most venturesome, has a colonial empire 23 times the area of the homeland. A traditional ally of Britain, Portugal remained neutral in World War II but gave the Allies the right to use vital island bases in the Atlantic.

Portugal was part of Spain until it won independence in 1143 with Alfonso I as the first King. During the long reign of King John I (1385-1433), a great commercial empire was built, largely through the exploratory hobby of the King's son, Prince Henry the Navigator. Bartholomeu Diaz explored Africa's west coast and reached the Cape of Good Hope in 1488. Vasco da Gama rounded the Cape and discovered the water route to India in 1497-99. Portugal's empire reached its crest about 1540, when it embraced the coast of Brazil, east and west Africa, Malabar, Ceylon, Persia, Indo-China and Malaya.

In 1580-81 Spain and Portugal were joined in a personal union under Philip II of Spain. Portugal revolted in 1640 and set up a new dynasty under John IV, Duke of Braganza, but the country never recovered its position as one of Europe's major powers. In 1806, when Portugal refused to obey Napoleon's orders that all continental ports be closed to British ships, French forces invaded the country but were ousted in 1811 by British and Portuguese forces under the Duke of Wellington.

Brazil declared its independence in 1822 and John VI's son, Pedro, became Emperor of the new state as Pedro I. In 1832, Pedro I, who had abdicated as Emperor of Brazil in 1831, returned to Europe and led an uprising with British assistance in favor of his daughter, Maria II, displacing his younger brother, Miguel I, who had been proclaimed King in 1828. The descendants of Maria's marriage with Ferdinand of Saxe-Coburg ruled Portugal until 1910, when King Manoel II was forced into exile by a republican revolt.

On June 19, 1911, the monarchy was abolished, and a republican Constitution was introduced. Portugal proclaimed its loyalty to the British alliance upon the outbreak of World War I, and Portuguese troops fought both in Africa and on the Western Front.

On May 30, 1926, a revolution led by the army deposed the President and set up a military dictatorship. General António Oscar de Fragoso Carmona became Premier and acting President Nov. 29, 1926, and was elected President on March 25, 1928. Dr. António de Oliveira Salazar, who was appointed Finance Minister in 1928, founded the organization known as the National Union in 1930 and has been Premier and dictator since 1932. His regime, while admittedly opposed to liberal or democratic principles, brought political and economic stability to Portugal.

General elections for members of the National Assembly held on Nov. 18, 1945, Nov. 13, 1949 and Nov. 8, 1953 were, except in isolated districts in 1953, boycotted by the opposition, and the National Union was continued in office. Portugal adhered to the North Atlantic Pact in April 1949.

President Carmona died April 18, 1951; Gen. Francisco Lopes was elected without opposition to succeed him July 22, 1951. **GOVERNMENT AND DEFENSE.** Under the Constitution of 1933 Portugal is a corporative republic. The President is popularly elected for a term of 7 years; the National Assembly of 120 members for a term of 4 years. There is also a Corporative Chamber which handles economic, social and some legislative matters; its members are representatives of local autarchies and of the several branches of social activities—administrative, moral, cultural and economic. The Assembly theoretically may overrule the President's veto by two-thirds vote. The President appoints the Premier, who selects the Cabinet; the latter is not responsible to the National Assembly.

Military service is compulsory; the initial training period is 6 years, but not all those liable for duty are called up. The navy in 1956 had 5 destroyers, 3 submarines, 8 sloops and several smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Education is compulsory, but in 1950,

41.7% of the population (10 years and over) could not read and write. Primary schools numbered 14,943 in 1953-54, with 796,467 pupils; the 354 secondary schools had 58,721 pupils. There were 3 universities (Coimbra, Lisbon, Oporto) with 14,563 students.

Portugal's corporate state has a planned economy in which each producing unit regulates itself in the interest of the nation. Corporate units have been established in agriculture, industry and finance.

Sixty per cent of Portugal's people are engaged in agriculture. Although wheat is the leading crop, it is insufficient to meet domestic needs, and grain must be imported. One of the world's leading wine-makers, Portugal produces two famous kinds—Port in the vicinity of Oporto, and Madeira in the islands of the same name. In olive oil production, Portugal usually ranks third in the world (estimated production 1956-57: 91,000 metric tons).

Leading crops in 1956, in metric tons, were wheat, 568,000; barley, 78,000; oats, 81,000. Wine production in 1956 was about 266,000,000 U. S. gallons (1951-55 average: 270,000,000 gallons).

Wool production in 1955 was approximately 5,000 metric tons, clean basis.

Trade statistics, in millions of escudos:

	1954	1955	1956*
Exports	7,297	8,166	8,590
Imports	10,084	11,453	12,678

* Preliminary.

In 1956 the principal customers were the Portuguese overseas territories (24%), Britain (14%) and the U. S. (10%); chief suppliers, Germany (16%), the Portuguese overseas territories (12%) and Britain (14%). The chief exports were cork (19%), fish, mainly sardines (12%) and wine (8%). Main imports included wheat and flour, ships, industrial machinery, raw cotton and iron and steel.

On June 30, 1956, the merchant marine had 308 vessels (100 tons and over) of 536,765 gross tons. Railway mileage in 1954 was 2,250, and highway mileage was 18,300. **NATURAL FEATURES AND RESOURCES; CLIMATE.** Portugal is crossed by many small rivers, and also by three large ones which rise in Spain, flow into the Atlantic, and divide the country into three geographic areas. The Minho (Miño in Spain) River, part of the northern boundary, cuts through a mountainous area that extends south to the vicinity of the Douro (Duero) River. South of the Douro the mountains slope to the plains about the Tagus (Tejo) River. The remaining division is the southern one of Alentejo.

The Azores, stretching over a distance of 400 miles in the Atlantic, consist of 9 islands divided into three groups, with

total area of 888 square miles. The nearest continental land is Cape da Roca, Portugal, which lies 800 miles to the east. The Azores are an important station on Atlantic air routes, and both Britain and the United States established air bases there during World War II. Madeira, consisting of two inhabited islands, Madeira and Porto Santo, and two groups of uninhabited islands, lies in the Atlantic about 535 miles southwest of Lisbon. Total area of the Madeiras is 314 square miles.

Mineral resources have not been fully developed, but wolfram, coal, iron ore, copper, manganese, iron pyrites, lead, tin, and other ores are found. The coal output in 1956 was 412,800 metric tons; iron ore (metal content 50%), 234,000 tons; tin concentrates, 1,320 tons; (1955) pyrites, 669,700 tons; lead, 1,400 tons; tungsten, 4,640 tons.

Portugal is one of the world's leading producers of cork. In 1956, 115,374 metric tons of cork, 9,577 tons of turpentine and 44,563 tons of resin were exported.

The fishing industry is a basic part of the national economy. Of special importance is the sardine industry centered at Setúbal. The total fishing catch in 1955 was 390,600 metric tons.

Portugal's climate is equable and temperate, but in the deep valleys where the mountains keep out the cool winds from the Atlantic, it is excessively hot in summer. Lisbon, Coimbra and Oporto all have mean temperatures of 60° to 61.5°. Heavy fogs are common along the coast. Rainfall is as high as 110 inches annually in the north and on the Serra da Estrela.

PORTUGUESE OVERSEAS TERRITORIES

	Area, sq. mi.	Population, est. 1955
AFRICA		
Angola	481,351	4,362,264
Cape Verde Islands	1,557	172,000
Mozambique	297,731	6,040,000
Portuguese Guinea	13,948	541,000
São Tomé and Príncipe	372	58,000
ASIA		
Macao	6	200,000
Portuguese India	1,538	644,000
Timor	7,332	478,688

The status of the Portuguese overseas territories is fixed by the Colonial Act of July 1930 included in the Constitution approved March 19, 1933, and revised in 1951. Each territory has a Governor or Governor General, appointed by the Council of Ministers for an initial 4-year term and responsible to the Minister of Overseas Territories at Lisbon. Each territory has financial and administrative autonomy.

ANGOLA (Portuguese West Africa)—Status: Overseas territory.
Capital: Loanda (pop. 1955: 189,590).

Governor General: José Agapito da Silva Carvalho.

Foreign trade (1956): exports, 3,289,026,-000 escudos (19% to the U. S.); imports, 3,162,216,000 escudos (45% from Portugal). Chief exports: coffee (49%), diamonds (10%), fish meal (6%).

Agricultural exports (1956): coffee, 89,880 metric tons; sisal, 37,283 tons; cotton, 5,908 tons; sugar, maize, palm kernels and oil, peanuts, rice.

Minerals: diamonds (1956: 743,930 carats), lignite, copper.

Forest products: beeswax, timber.

Manufactures: sugar, palm oil, whale oil, fish oil.

Angola stretches along the west African coast for about 1,000 miles from Belgian Congo to the Cunene River. Outside of a coastal plain varying in width from 30 to 100 miles, the area is part of the great African plateau. The Angola coast and the Congo River were explored by the Portuguese in 1482-85, and Loanda was founded in 1576. A legislative council with an elected majority was established in Angola in 1955.

Angola is primarily an agricultural country. Its varied altitude enables it to produce both tropical and temperate crops. Excellent grazing land exists in many parts of the colony. The chief ports are Loanda and Lobito. The great majority of the population are of Bantu-Negro stock, mixed in the Congo district with pure Negro.

Mean annual temperature at Loanda is 74.3°; the cool season lasts from June to September, the wet from October to May. Rainfall in the lower altitudes exceeds 40 inches annually.

CAPE VERDE ISLANDS—Status: Overseas territory.

Capital: Praia (population 9,980).

Governor: Manuel Marques Abrantes Amaral.

Foreign trade (1956): exports, 288,453,-000 escudos; imports, 308,242,000 escudos. Chief exports: ships stores (92%), preserved fish.

Agricultural products: coffee, millet, castor oil, oranges, hides.

This group of 14 volcanic islands lying off the west African coast was discovered in 1456 by the Venetian captain Alvise Cadamosto, in the service of Prince Henry the Navigator. The island of São Vicente is an important fueling station on the South American route. The vast majority of the inhabitants are mulattoes (101,498 in 1950) and Negroes (42,487)—descendants of slaves brought to the islands from Africa by early settlers. Public slavery was abolished in 1854, and private slavery in 1876.

Summer temperatures are high in the archipelago, ranging up to 90°. The rainy season lasts from August to October.

MOZAMBIQUE (Portuguese East Africa)—Status: Overseas territory.

Capital: Lourenço Marques (population 93,265).

Governor General: Gabriel Maurício Teixeira.

Foreign trade (1956): exports, 1,515,-400,000 escudos; imports, 2,736,322,000 escudos. Chief exports: cotton (20%), sugar (16%), copra, sisal, cashew nuts.

Agricultural exports (1956): cotton, 22,-677 metric tons; sugar, 98,176 tons; copra, 41,377 tons; sisal, 27,940 tons; cashew nuts, 37,974 tons; tea, 6,276 tons.

Minerals: gold, coal, graphite, mica.

Forest products: mangrove bark, timber.

Mozambique, stretching for about 1,430 miles along Africa's southeast coast, was discovered by Vasco da Gama in 1498, although the Arabs had penetrated into the area as early as the 10th century A.D. It was first colonized in 1505, and by 1510 the Portuguese were masters of all the former Arab sultanates on the east African coast. The boundaries with British Central and South Africa were delimited in 1891, and with Tanganyika Territory in 1886 and 1890. By the Treaty of Versailles, following World War I, Portugal was allotted the Kionga triangle, formerly part of German East Africa. One of the four provinces—Manica and Sofala (87,454 sq. mi.)—was held by the Mozambique Company until 1942 when its charter was not renewed.

Agriculture is the chief industry. There are many large plantations, some of which are partially mechanized. Stockraising is hampered by prevalence of the tsetse fly.

Ninety-nine per cent of the inhabitants are native Africans of the Bantu Tribes. In 1950 there were 48,213 Europeans, 12,630 Asiatics and 25,149 mulattoes. There were 1,652 miles of railway and 18,078 miles of road, mostly unimproved. The chief ports are Lourenço Marques and Beira, which is also the port for Rhodesia. The principal river is the Zambezi.

The cool season lasts from April to August, and the rainy season from December to March. On the central coast the mean annual temperature is about 85°.

PORTUGUESE GUINEA—Status: Overseas territory.

Capital: Bissau (population 18,309).

Governor: Silva Tavares.

Foreign trade (1956): exports, 203,208,-366 escudos; imports (1954), 171,922,324 escudos. Chief exports: peanuts (53%), coconuts.

Agricultural products: peanuts (exports 1956: 34,027 metric tons), coconuts, copra, rice, palm oil.

Forest products: timber, wax, rubber.

This area, lying on the west African coast and almost surrounded by French West Africa, was discovered in 1446 by the Portuguese Nuno Tristão and was separated from the colony of the Cape Verde Islands in 1879. It consists of a low-lying coastal region and 60 islands off the coast. The country is undeveloped economically,

and most of the natives are farmers. There are no railways, but navigable rivers totaling over 1,000 miles are important trade arteries; there are also about 1,820 miles of roads. About two-fifths of the natives are Moslem. On the coast, the temperature varies between 77° in January and 85° in May. The dry season extends from December to May.

SÃO TOMÉ AND PRÍNCIPE—Status: Overseas territory.

Capital: São Tomé (population 7,813).

Governor: António Pires Barata.

Foreign trade (1955): exports, 161,703,-231 escudos; imports, 125,221,828 escudos. Chief exports: cacao (70%), copra (11%), coconuts, coffee.

Agricultural products: cacao, coffee, coconuts, copra, palm oil.

These volcanic islands, lying in the Gulf of Guinea about 150-175 miles off the west African coast, were discovered by the Portuguese in 1471. Most of the early inhabitants were convicts and Jews from Portugal and slaves from Brazil and the mainland, but the bulk of the present inhabitants are Negro contract laborers from the mainland and Cape Verde engaged to work cacao plantations.

MACAO—Status: Overseas territory.

Capital: Macao (population 166,544).

Governor: Joaquim Marques Esparteiro.

Chief exports: fish, cement, preserves.

Manufactures: cement, preserves, fire-crackers, vegetable oils, metal products.

Macao comprises the peninsula of Macao and the two small islands of Taipa and Colôane on the south China coast, about 35 miles from Hong Kong. Established by the Portuguese in 1557, it is the oldest European outpost in the China trade, but Portugal's sovereign rights to the port were not recognized by China until 1887, and its boundaries are still not delimited. The port has been eclipsed in importance by Hong Kong, but it is still a busy distribution center, and also has an important fishing industry employing over 40,-000 people. It is notorious for its opium trade and gambling houses. Most of the population is Chinese.

PORTUGUESE INDIA—Status: Metropolitan province.

Capital: Panjim (Nova Gôa) (population 31,950).

Governor General: Paulo Bénard Guedes.

Foreign trade (1956): exports, 82,741,-364 rupias* (40% to Japan); imports, 114,051,886 rupias (19% from Britain). Chief exports: iron ore (71%), manganese ore (25%), cashew nuts.

Agricultural products: cashew nuts, coconuts, spices.

Minerals (exports 1956): iron ore, 2,046,-770 metric tons; manganese ore, 162,347 tons.

* 1 rupia = 5.97 escudos.

The area consists of Gôa and 3 islands on the Malabar coast of India; Damão and

the territories of Dadará and Nagar-Aveli, on the Gulf of Cambay; and Diu, with the continental territories of Goccola and Simbor, on the coast of Gujarat. Gôa, captured in 1510 by the Portuguese, later became capital of the whole Portuguese empire in the east. The native population is largely Hindu.

TIMOR—Status: Overseas territory.

Capital: Dili (population 7,000).

Governor: Cesar Maria de Serpa Rosa.

Foreign trade (1956): exports, 38,687,000 escudos (34% to the Netherlands); imports, 56,598,000 escudos (28% from Portugal). Chief exports: coffee (80%), rubber.

Agricultural exports (1956): coffee (1,120 metric tons), rubber (231 tons), copra (1,114 tons).

Forest products: sandalwood, wax.

Portuguese Timor consists of the eastern half of the island of Timor in the Malay Archipelago, with the territory of Ambeno and two neighboring islands. It was first settled by the Portuguese early in the 16th century. In 1859 the island was divided between Portugal and the Netherlands; later boundary adjustments were made in 1904. Fishing and copra manufacture are important; trade is mostly in the hands of Chinese, Malaysians and Arabs. Europeans numbered 568 in 1950. Timor was occupied by Dutch and Australian troops in Dec. 1941, and by the Japanese in Feb. 1942.

Rumania (People's Republic)

(Republica Populara Româna)

Area: 91,654 square miles.

Population (census 1956)*: 17,489,794 (1948: Rumanian, 85.7%; Magyar, 9.4%; German, 2.2%; Jews, 0.9%; others [Turkish, Ruthenian, Bulgarian, Gypsy, Ukrainian] 1.8%).

Density per square mile: 190.8.*

Chairman of Presidium: Petru Groza.

Premier: Chivu Stoica.

Principal cities (census 1956)*: Bucharest, 1,236,906 (capital); Cluj, 154,752 (Transylvanian industrial center); Timisoara, 142,251 (western commercial center); Stalin (Brasov), 123,882 (industrial center); Ploesti, 114,560 (oil).

Monetary unit: Leu.

Languages: Rumanian, Hungarian, German, Turkish.

Religions (est. 1947): Eastern Orthodox, 81%; Greek Catholic, 9%; Roman Catholic, 7%; others, 3%.

* Preliminary figures.

HISTORY. In World War I, Rumania joined the Allies and won enough land at the peace conference to double its size. In World War II, Rumania joined the Axis and lost about half its earlier gains. Its present size is about that of Oregon. Politically, it is dominated by the Soviets.

Most of Rumania was the Roman province of Dacia from about A.D. 100 to 275. From the 6th to the 12th centuries, wave after wave of barbarian conquerors—

Vlachs, Bulgars and others—passed over the area. Of the two regions which eventually became Rumania, Walachia was taken by the Turks in 1411, and Moldavia in the 16th century, but both retained semi-autonomy. After the Russo-Turkish War, they went under *de facto* Russian protection in 1774.

The Treaty of Paris following the Crimean War nominally united the two provinces in 1858, and Alexander Cuza was elected Prince of Moldavia and Walachia. In 1866 he was forced to abdicate and was succeeded by Prince Carol of Hohenzollern-Sigmaringen. The Treaty of Berlin recognized Rumania's complete independence in 1878, and in 1881 the principality was elevated to a kingdom. Rumania's spoils from the Second Balkan War in 1913 included the Black Sea province of Dobruja. The following year King Carol I was succeeded by his nephew, Ferdinand. The gains of World War I, making Rumania the largest Balkan state, included Bessarabia, northern Transylvania and Bukovina. The Banat, a Hungarian area, was divided with Yugoslavia.

In 1926 Crown Prince Carol renounced his rights to the throne, and when King Ferdinand died on July 20, 1927, Carol's son, Michael (Mihai) became King under a regency. However, Carol returned from exile in 1930, was crowned King Carol II, and gradually became a powerful political force in the country. On Feb. 10, 1938, he abolished the democratic Constitution of 1923. On June 21, 1940, the country was reorganized along Fascist lines, and the Fascist Iron Guard became the nucleus of the new totalitarian party. On June 27, the Soviet Union occupied Bessarabia and northern Bukovina. By the Axis-dictated Vienna Award of Aug. 30, 1940, two-fifths of Transylvania went to Hungary. On Sept. 4, the King dissolved Parliament and granted the new Premier, Ion Antonescu, full power, after which he abdicated and then went into exile. The first official act of his son, Michael I, was to confirm Antonescu in his status as head of the state and Premier. Rumania subsequently signed the Axis Pact on Nov. 23, 1940, and the following June joined in Germany's attack on the U.S.S.R., reoccupying Bessarabia. Following the invasion of Rumania by the Red Army in Aug. 1944, King Michael led a *coup d'état* which ousted the Antonescu government. An armistice with the U.S.S.R. was signed Sept. 12 in Moscow.

Elections held Nov. 19, 1946, resulted in a victory for the Communist-dominated government bloc. Michael abdicated on Dec. 30, 1947, and thereafter the nation was declared a "people's republic." The Communist-controlled People's Democratic Front was unopposed in elections held

Nov. 30, 1952, and Feb. 3, 1957. Rumania was admitted to the U. N. in 1955.

GOVERNMENT. The 1952 Constitution is based on that of the U.S.S.R. The supreme organ of state authority is the Grand National Assembly of 437 members elected for 4 years by all citizens over 18. It elects a Presidium to act when it is not in session and also elects the Council of Ministers, headed by the Premier, the supreme executive and administrative organ.

PEACE TREATY OF 1947. The Paris peace treaty ratified on Sept. 15, 1947, confirmed the *de facto* cession to the Soviet Union of Bessarabia and northern Bukovina, the return to Rumania from Hungary of northern Transylvania (thus annulling the Vienna Award of 1940) and the cession of southern Dobruja to Bulgaria. In addition, Rumania was required to pay reparations in kind in the amount of \$300,000,000 (reduced to \$225,000,000 by the U.S.S.R. in 1948) to the Soviet Union over a period of eight years. She also was to make compensation in lei to the amount of two-thirds of the original value of Allied property damaged or destroyed in Rumania.

The treaty limited the strength of the Rumanian armed forces as follows: army 125,000 men, navy 5,000 men and tonnage of 15,000, air force 8,000 men and 150 planes. The armed forces were soon reorganized and re-equipped with Soviet assistance.

Despite treaty limitations, the total of Rumanian armed-forces personnel was estimated at more than 450,000, including security troops, by the end of 1954; a 10% reduction was announced in 1955 and a further cut of about 40,000 in 1956. The navy in Dec. 1956 had 4 old destroyers, 3 submarines and other smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Education is free and compulsory. Illiteracy was 23.1% in 1948. In 1955 there were 17,000 elementary schools with 2,400,000 pupils and 500 secondary schools with 150,000 pupils. There are five universities—at Bucharest, Jassy, Cluj (2) and Timisoara.

Rumania is predominantly agricultural, with about 80 per cent of the population engaged on the soil. In wheat, rye and other grains, it is one of the richest countries of southeastern Europe. The largest acreage is usually devoted to corn and wheat. Other crops are flax, hemp, fruit, vegetables, potatoes, sugar beets, sunflower seeds, tobacco and grapes. Stockraising is also important.

Agrarian reform measures effected in 1945 provided for the distribution of estates over fifty hectares (123.6 acres) in lots of 12½ hectares to each peasant.

Industrialization made considerable progress under a 5-year plan covering the

years 1951-55 which emphasized the iron, steel, metal, machinery and other heavy industries. The Soviet half-share in Soviet-Rumanian joint companies, which control the major industries, was sold to Rumania in 1954. Industries directly connected with agriculture, such as flour milling, distilling and brewing, are still of basic importance. Probably the most important industries are food processing, textiles, metals, chemicals, wood and paper. All but small business enterprises are nationalized.

Foreign trade is under complete government control. According to the U. N. Economic Commission for Europe, total trade (imports and exports) amounted to \$670,000,000 in 1954, including \$560,000,000 with countries of the Communist group. Principal exports are petroleum products, cereals and cereal products, wood and wood products. Leading imports are iron and manufactures, machinery and motors, vegetable fibers and products.

The Danube, flowing along the southern border for more than 200 miles, is a highly important commercial artery. Transshipment between seagoing vessels and river barges is made at Galati and Braila. The principle of freedom of navigation on the Danube for all nations was recognized in the 1947 peace treaty. The principal seaport is Constanta. Railway mileage in 1949 was 7,363. Highway mileage in 1955 was 61,794.

The 1956 budget provided for revenue of 45,430,600,000 lei and expenditure of 44,430,600,000 lei, including 26,144,100,000 lei invested in the national economy.

NATURAL FEATURES AND RESOURCES; CLIMATE. The Carpathian Mountains divide Rumania's upper half from north to south and connect near the center of the country with the Transylvanian Alps, running east and west.

North and west of these ranges lies the Transylvanian plateau, and to the south and east are the plains of Moldavia and Walachia. In its last 190 miles, the Danube River flows through Rumania only. It enters the Black Sea in northern Dobruja, just south of the border of the Soviet Union.

By far the most valuable of Rumanian minerals is oil, produced chiefly in the Ploesti region about 35 miles north of Bucharest. Production in 1955 was estimated at 10,575,000 metric tons (about 79,300,000 barrels).

Natural gas from Transylvania is the second most important mineral, coming to 3,900,000,000 cubic meters in 1955. Other important minerals are iron ore (1955: about 700,000 tons); lignite (1955: 6,200,000 tons), copper, gold and silver. Uranium deposits have been reported.

The Moldavian-Walachian region has hot summers and extreme frosts and blizzards

in winter. Variations are less extreme in Transylvania and the Banat. Bucharest's average summer temperature is 72°; winter 27°. In some winters the Danube is ice-bound for as long as three months. Rainfall, heaviest in summer, averages 15-20 inches annually.

El Salvador (Republic)

(República de El Salvador)

Area: 8,260 square miles.*

Population (est. July 1, 1956): 2,268,464 (mestizo, 78%; Indian, 11%; white, 11%).

Density per square mile: 274.6.

President: José María Lemus.

Principal cities (est. 1953): San Salvador, 180,713 (capital); Santa Ana, 56,952 (coffee); San Miguel, 28,730 (coffee, henequen).

Monetary unit: Colón.

Language: Spanish.

Religion: Roman Catholic.

* Land area: 8,165 square miles.

HISTORY AND GOVERNMENT. El Salvador is the smallest, most densely populated of Central American nations, and the only one without an Atlantic coast line.

Pedro de Alvarado, a lieutenant of Cortez, conquered El Salvador in 1525. The area was administered as part of Guatemala until the general Central American revolution against Spain in 1821. El Salvador struck out as an independent republic in 1839 after the dissolution of the Central American Union. Its story since then has been largely one of revolution.

In Jan. 1931, the first free election in 20 years brought in Arturo Araujo as President. He was overthrown before the year was over. General Maximiliano Hernández Martínez, his successor, remained in power until May 1944, when a general strike forced his resignation. The next regime, also militarist-led, lasted only five months, and was succeeded March 1, 1945, by a regime headed by Salvador Castañeda Castro, who was ousted Dec. 14, 1948, by a revolutionary junta. Major Oscar Osorio, one of the junta's members, was named President in the March 1950 elections. Col. José María Lemus was elected to succeed him in the March 1956 elections.

The Constitution provides for a President, popularly elected for six years and normally ineligible to succeed himself; also, a one-house legislature of 54 members. The military forces include an army limited to 3,000, a militia, a national guard and a small air force.

SOCIAL AND ECONOMIC CONDITIONS. Education is free and compulsory; both public and private schools are state-controlled. In 1950, 57.8% of those 10 years of age and over could not read and write. Primary schools in 1954 numbered 2,032 with 210,125 pupils; secondary schools numbered 126 with 12,376 stu-

dents. The national university had an enrollment of 1,315 students in 8 faculties.

Mestizos (mixed white and Indian) are the predominant racial group. There are no tribal Indians.

El Salvador is one of the most intensively cultivated countries in Latin America. Coffee, which accounts for 85 per cent of the total exports (1956-57 production: 1,472,000 bags of 132 lb. each) is controlled in volume by a commission of officials and planters. Cotton is second in importance. Corn, sugar cane, beans, rice, tobacco, cacao, indigo, millet and sisal fiber are other products.

El Salvador's largest national enterprise, the Lempa river hydroelectric project, began partial operation in 1953.

Exports in 1956 totaled 281,827,074 colones; imports, 261,770,059 colones. The U. S. took 45% of the exports and supplied 53% of the imports.

The two railways have 385 miles of track. Roads (1954) included paved, 375 miles; other all-weather, 375 miles; unimproved, 1,200 miles.

NATURAL FEATURES AND RESOURCES; CLIMATE. Most of El Salvador is a fertile volcanic plateau about 2,000 feet high. There are several volcanoes, some still active, and many lovely crater lakes.

Gold, silver, coal, copper, iron, zinc, mercury and sulfur are the nation's chief minerals. Gold production in 1956 totaled 2,983 troy oz.; silver, 161,475 oz.

Forest resources, much smaller than in other Central American states, include dyewood, mahogany, cedar and walnut. El Salvador is a leading source of balsam.

Mountain ranges along the borders of Guatemala and Honduras give the highlands an almost temperate climate, but the lowlands are often hot and sultry. Temperatures at San Salvador range from about 59° (average daily low) in January to 85° (average daily high) in December; these are the two coolest months. The rainy season lasts from May to October.

San Marino (Republic)

Area: 38 square miles.

Population (est. 1955): 14,000 (mostly Italian).

Density per square mile: 368.4.

Executive: two Regents selected every six months by the Grand Council.

Principal town: San Marino (est. pop. 2,000) (capital).

Monetary unit: Lira.

Language: Italian.

Religion: Roman Catholic.

San Marino, the oldest and smallest republic in the world, is one-tenth the size of New York City. It is entirely sur-

rounded by Italy, in the Apennines near Rimini. According to tradition, San Marino was founded about A.D. 350 and had good luck for centuries in staying out of the interminable wars and feuds on the Italian peninsula.

San Marino hires its police and judges from Italy. It no longer confers titles for a consideration, but it does derive much revenue from the exporting of its postage stamps, which are changed often to keep philatelists buying. Other exports are barley, wine and cattle, as well as building stone from Mount Titano.

Executive power is exercised by Regents, two of whom are appointed every six months from the popularly-elected Grand Council. There were 18 primary schools and 3 secondary schools in 1955.

Saudi Arabia (Kingdom)

Area: c. 617,760 square miles.

Population (est. 1952): 7,000,000.

Density per square mile: c. 11.3.

King: Sa'ud ibn Abd al Aziz al Sa'ud.

Prime Minister: Emir Faisal.

Principal cities (est. 1954): Mecca, 150,000 (joint capital, religious center); Jidda, 100,000 (chief port); Hufuf, 100,000 (commercial center); Riyadh, 80,000 (joint capital).

Monetary unit: Riyal.

Language: Arabic.

Religion: Moslem.

The kingdom of Saudi Arabia, which occupies most of the Arabian peninsula, is almost entirely the creation of King Ibn Sa'ud (1882-1953). Its earlier history is that of Arabia. Descendant of earlier Wahhabi rulers, Ibn Sa'ud seized the emirate of Riyadh in 1901, at the age of 20, and soon set himself up as the leader of the Arab nationalist movement. By 1914 he had reconquered all of Nejd and Hasa. Remaining neutral during World War I, he resumed his drive after the war and through a series of local military campaigns was able to proclaim himself King of Hejaz and Nejd and dependencies in 1927. The united kingdom of Saudi Arabia was proclaimed in 1932. Saudi Arabia remained neutral until nearly the end of World War II but was one of the original members of the U. N. and joined the Arab League in 1945. King Ibn Sa'ud died Nov. 9, 1953, and was succeeded by Sa'ud (born 1905), the eldest of his many sons.

Saudi Arabia is a nearly absolute monarchy. A Council of Ministers headed by the Prime Minister was formed in Oct. 1953. Hejaz and Nejd are under separate administrations. Tribal organizations are influential. There is a small army.

The majority of the inhabitants are Bedouin—nomads following their flocks over the desert. The population is pre-

dominantly Sunni Moslem, and the religious law of Islam is the common law of the land. Mecca and Medina are the leading religious centers of Islam and the annual influx of pilgrims to those cities is the most important commercial activity outside the oil industry.

Saudi Arabia's desert climate restricts agriculture to the highlands of Asir and scattered oases. Dates are the staple crop; grain, fruits and vegetables are also grown. Camels, sheep and goats are raised and some animal products, such as hides, wool and ghee (clarified butter), are exported.

Most transportation continues to be by sea and by camel caravan, although roads and motor tracks now connect the major centers. A railroad from Dammam to Riyadh (345 mi.), completed in 1951, is being extended across the peninsula to Medina and Jidda.

The kingdom's budget for the fiscal year 1954-55 estimated revenue at U. S. \$305,940,000 and expenditure at \$361,330,000; the deficit was to be met from the general reserve fund. Direct payments from oil concessions in the form of royalties and income taxes were estimated at \$257,700,000 in 1954-55.

Oil, discovered in 1936 in the province of Al Hasa along the Persian Gulf, is produced by the U. S.-owned Arabian-American Oil Co. (Aramco). The main production centers are Dharan, Abqaiq, Qatif and Ain Dar. Production has skyrocketed since World War II. The company's expenditures and payroll are important invisible exports and oil revenues have greatly strengthened the financial position of the kingdom, which receives one-half the company's profits. The oilfields are connected by pipeline with the Mediterranean port of Sidon, Lebanon. In 1956 production totaled 360,923,384 barrels; the crude run at the Ras Tanura refinery was 72,662,690 barrels.

Siam. See Thailand

Spain (Nominal Monarchy)

(España)

Area: 194,945 square miles.

Population (est. Dec. 31, 1956): 29,130,499 (Spanish, Basque, Catalan).

Density per square mile: 149.4.

Chief of State: Francisco Franco y Bahamonde.

Principal cities (est. Dec. 31, 1956): Madrid, 1,843,705 (capital); Barcelona, 1,403,028 (chief port, textiles); Valencia, 511,440 (silk, oranges); Seville, 405,853 (wines, iron ore); Málaga, 277,824 (seaport); Saragossa, 274,222 (rail center).

Monetary unit: Peseta.

Languages: Spanish, Basque, Catalan.

Religion: Roman Catholic.

HISTORY. Spain, twice the size of Oregon, was once one of the world's great powers.

From 201 B.C. to A.D. 406, it was part of the Roman Empire. Then the Goths and the Vandals formed a powerful kingdom, which was partially conquered in the 8th century by the Moors from Africa. The last Moorish stronghold, the kingdom of Granada, fell to the forces of King Ferdinand and Queen Isabella, who were trying to unify Spain, in 1492. In the same year, the Spanish-financed explorer Christopher Columbus was discovering the new world for the Spanish Crown.

Charles V (1516-55) became King of Spain and also Holy Roman Emperor. Under his son, Philip II, Spain reached the peak of its power, but the beginning of decline set in with Britain's defeat of the "Invincible" Armada in 1588.

The line of Spanish Hapsburgs ended in 1700, and the War of the Spanish Succession followed. By the Treaty of Utrecht (1713) Spain was forced to accept a Bourbon King, the Duke of Anjou, and lost Gibraltar and all holdings in the Netherlands and southern Italy. Then, while the Spaniards were resisting Napoleon's efforts to establish a Bonaparte line in Spain, most of their colonies in America revolted and became independent. The loss of Cuba, Puerto Rico and the Philippines in the Spanish-American War of 1898 left Spain only scattered possessions in Africa. Neutrality was maintained in World War I.

From 1923 to 1930, Spain was a military dictatorship under General Miguel Primo de Rivera. A wave of republicanism in 1931 forced the abdication of King Alfonso XIII, and a new Constitution was drawn declaring Spain to be a workers' republic. Several revolts, strikes and shifts of government kept Spain in political chaos, and on July 18, 1936, the army revolt led by General Francisco Franco burst into civil war. While Hitler and Mussolini helped Franco, Russia helped the Loyalist side. The last Loyalist forces surrendered on March 29, 1939. Spain became a dictatorship under Franco and signed the anti-Comintern pact in 1939.

While Franco shied away from the risk of becoming a belligerent in World War II, he was pro-Axis in sympathy, helped the Axis with supplies, information and services to German U-boats, and even sent the Spanish Blue Division to help fight the Russians.

On Sept. 26, 1953, the U. S. and Spain signed three agreements providing for the use and development by U. S. forces of certain Spanish air and naval bases in return for U. S. military and economic aid.

GOVERNMENT. Franco is head of the state, national chief of the Falange party, Prime Minister and *Caudillo* (leader) of the empire. Practically, the country is

ruled by the Cabinet (appointed by Franco), the National Council of the Falange party and, to a lesser extent, the Cortés (parliament). The principal function of the Cortés is the planning and formulation of laws without prejudice to Franco's veto power. Cabinet ministers, party officials, civil governors, university heads, and the presidents of learned bodies become members of the Cortés ex-officio. There is no provision for the introduction of legislation by any of the members.

In a referendum held July 6, 1947, the Spanish people approved a Franco-drafted succession law declaring Spain a monarchy again. Franco, however, is to continue as Chief of State and upon his death or incapacity the government and a Council of the Realm constituted by the law are to nominate as King "that person of royal blood who is most qualified by right," subject to the approval of the Cortés. The law reserves to Franco the right to nominate his own successor, subject also to the Cortés approval by two-thirds vote.

DEFENSE. Franco is commander in chief of the army, navy and air force, each administered by a cabinet minister responsible to him. Military service is compulsory for two years. The standing army is estimated at 350,000 men. The navy in Dec. 1956 had 5 cruisers, 18 destroyers, 6 submarines, 31 frigates and escort vessels and many smaller vessels.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Primary education is compulsory and free; religious instruction is permitted. In 1950, 14.24% of those 10 years of age and over could not read and write. In 1952-53 there were 65,411 primary schools with 2,887,090 pupils, 1,050 secondary schools with 260,000 pupils and 12 universities (1953) with 58,143 students.

Agriculture. Spain is predominantly agricultural, although there are extensive non-arable areas. The principal land uses, apart from forest, pasture and forage crops, are the production of grain, potatoes, pulse, sugar beets, oranges, grapes and olives. Since the civil war Spain has not recovered balance in production and consumption of foodstuffs. Normally, Spain produces exportable quantities of oranges, lemons, almonds, filberts, raisins and other subtropical commodities. Wine production in 1956 was about 488,400,000 U. S. gallons (1951-55 average: 477,300,000 gallons); olive oil production was 395,000 metric tons.

Livestock, also important, included in 1954, 4,500,000 cattle, 20,000,000 sheep and 5,000,000 hogs. Wool production in 1956 was 21,000 metric tons, clean basis.

PRINCIPAL CROPS

(thousands of metric tons)

	1954	1955	1956*
Wheat	4,798	4,003	4,207
Barley	2,205	1,718	1,550
Rye	526	493	510
Oats	526	506	450
Maize	751	616	710

* Provisional.

TRADE. Statistics of foreign trade are as follows, in millions of U. S. dollars:

	1954	1955	1956
Exports	464	446	441
Imports	614	617	767

Leading customers in 1955 included Britain (16%), Germany (15%), the U. S. (10%) and France (8%); leading suppliers, the U. S. (19%), France (11%), Britain (11%) and Germany (10%). Leading exports in 1956 were iron ore (10%), olive oil (6%) and oranges (6%). Principal imports were raw cotton, chemical products (especially fertilizer), petroleum and vehicles.

Industry. The textile industry, concentrated in Catalonia and normally employing over 300,000 workers, leads all others. The paper and chemical industries are also important. Pig iron production in 1956 was 913,034 metric tons; steel production, 1,242,617 tons. On March 31, 1957, 88 vessels of 207,927 gross tons were under construction.

Communications. The merchant fleet, which suffered severely during the civil war and World War II, comprised 1,246 vessels (100 tons and over) of 1,437,805 gross tons on June 30, 1956, according to *Lloyd's Register*. Highways total about 80,000 miles and railways about 11,200.

Finance. Recent data (budget estimates) are as follows, in millions of pesetas:

	1952-53*	1954-55*	1956-57*
Revenue	22,208	26,074	33,834
Expenditure	22,477	26,340	35,833

* Data are for each year in indicated biennial budgetary period.

The public debt on Dec. 31, 1955, was 97,963,200,000 pesetas, including treasury bonds and guaranteed obligations.

NATURAL FEATURES AND RESOURCES; CLIMATE. Spain, less than ten miles from Africa at the closest point, and separated from France by the Pyrenees, is generally a broad plateau sloping to south and east and crossed by a series of mountain ranges and river valleys. Most of the coast line is steep and rocky.

Minerals. Spain's mineral wealth, second to agriculture in the national economy, yields millions of tons of ore. Following are production figures for 1956, in metric tons: coal, 12,851,223; lignite, 1,934,735; iron ore (metal content 50%), 4,400,000; potash ore, 1,444,238; lead ore, 94,009; zinc ore, 155,690; mercury (1954),

1,487. Spain also produces copper, gold, magnesite, sulfur, tungsten, phosphates, silver and, reportedly, uranium.

Forests and Fisheries. Spanish forests yield lumber, pine resins, cork and esparto. Some 100,000 persons work in the fishing, canning and related industries. The 1956 catch, principally cod, tunny and sardines, was 606,858 metric tons.

Climate. Most of Spain's weather is extreme. Madrid, for example, reaches a high of 110° and a low of 10°. In the southeast, the protection of the Sierra Nevadas makes the climate subtropical. The northeast, with climate much like that of the British Isles, is the only region with normal rainfall.

OUTLYING ISLANDS. Off Spain's east coast in the Mediterranean are the Balearic Islands, which total 1,936 square miles. The largest is Majorca (1,405 sq. mi.). Sixty miles west of Africa are the Canary Islands (2,804 sq. mi.).

SPANISH COLONIAL POSSESSIONS

Country	Area, sq. mi.	Census, 1950
Morocco		
Ifni	579	38,295
Ceuta, Melilla, Alhucemas, Chafarinas and Peñon de Velez	82	141,302
Spanish Sahara		
Rio de Oro	71,043	1,304
Saguia el Hamra	31,660	6,445
Spanish Guinea	10,831	198,663

Sudan, The (Republic)

Area: 967,500 square miles.

Population (census 1955-56)*: 10,209,703.

Density per square mile: 10.6.*

Chief executive: five-member Council of State.

Prime minister: Abdullah Khalil.

Principal cities (census 1955-56)*: Omdurman, 113,686 (commercial center); Khartoum, 92,829 (capital); El Obeid, 52,382 (gum arabic); Wad Medani, 48,131 (cotton, livestock); Port Sudan, 47,650 (chief port).

Monetary unit: Sudanese pound.

Languages: English, Arabic, Nilotic and Negro tribal dialects.

Religions: Moslem (Sunni), pagan, Christian.

* Provisional figures.

HISTORY. The early history of the Sudan (known as the Anglo-Egyptian Sudan between 1898 and 1955) is connected with that of Nubia, where a powerful local kingdom was formed in Roman times with its capital at Dongola. After conversion to Christianity in the 6th century A.D., it joined with Ethiopia and resisted Mohammedanization until the 14th century. Thereafter the area was broken up into many small states until 1820-22 when it was conquered by Mohammed Ali, Pasha

of Egypt. Egyptian forces were evacuated during the Mahdist revolt (1881-98), but the Sudan was reconquered by the Anglo-Egyptian expeditions of 1896-98 and in 1899 became an Anglo-Egyptian condominium, which was reaffirmed by the Anglo-Egyptian treaty of 1936.

Egypt and Britain agreed in Feb. 1953 to grant self-government to the Sudan under an appointed Governor General. Under the self-government statute of March 31, 1953, an all-Sudanese Parliament was elected in Nov.-Dec. 1953 and an all-Sudanese government was formed, headed by Ismail el-Azhari as Prime Minister. Under the agreement the Sudanese people were to determine their political status at the end of a 3-year period following the elections, but in Dec. 1955 the Parliament declared the independence of the Sudan, which, with the approval of Britain and Egypt, was proclaimed on Jan. 1, 1956. El-Azhari was replaced as Prime Minister by Abdullah Khalil on July 5.

GOVERNMENT. Pending the election of a Constituent Assembly and the adoption of a definitive Constitution, the powers of chief of state are exercised by a five-member Council of State. The government is administered by the Prime Minister and his Cabinet. A bicameral Parliament has a Senate of 50 members and a House of Representatives of 97 elected members.

SOCIAL AND ECONOMIC CONDITIONS. The northern part of the country is peopled by Arabic-speaking Moslems, while in the backward south Negroid pagan tribes predominate.

Long-staple cotton, the chief export crop, is grown under irrigation in the Kassala and Tokar areas of the north and in narrow strips along the main Nile. Production was 118,000 metric tons in 1956-57. Durra, peanuts, corn and oilseeds are grown elsewhere. Livestock raising is the occupation of the majority of the population; in 1955 there were 2,000,000 camels, 5,500,000 cattle and 6,000,000 sheep.

Recent foreign trade data are as follows, in millions of Sudanese pounds:

	1954	1955	1956
Exports	40.5	51.3	66.8
Imports	48.5	48.8	45.2

Leading exports in 1956 were cotton (62%), gum arabic (8%), cottonseed (7%) and peanuts (6%). Leading customers were Britain (33%), India (13%) and Egypt (11%); leading suppliers, Britain (21%), Egypt (14%) and India (12%).

There are two trunk railways, one connecting Sudan with Egypt and the other affording access to the chief port, Port Sudan, on the Red Sea. The Nile system is the principal transportation artery.

NATURAL FEATURES AND RESOURCES; CLIMATE. About one-fourth the size of Europe, the Sudan extends from north to south about 1,200 miles and west to east about 1,000 miles. The northern region is a continuation of the Libyan Desert. The southern region is fertile, abundantly watered and, in places, heavily forested. It is traversed from north to south by the Nile, all of whose great tributaries are partly or entirely within its borders. The highest elevation is a mountain range parallel to the Red Sea, with heights of 4,000 to over 7,000 feet.

Salt is produced at Port Sudan, and gold deposits are worked at Gebel, near the Red Sea. Most of the world's gum arabic comes from the semiarid Kordofan area of the west (production 1956: 41,809 metric tons). The southern forests are rich in fibers and tannins.

The whole country lies within the tropics and has an exceedingly hot climate. At Khartoum the mean annual temperature is 80° and rainfall 5 inches.

Sweden (Kingdom)

(Sverige)

Area: 173,564 square miles.

Population (est. Dec. 31, 1956): 7,341,122 (practically all Swedish).

Density per square mile: 42.3.

Sovereign: King Gustavus VI Adolphus.

Prime Minister: Tage Frihof Erlander.

Principal cities (est. Dec. 31, 1956): Stockholm, 794,113 (capital); Göteborg, 387,061 (chief port, shipbuilding); Malmö, 213,260 (seaport); Norrköping, 89,226 (textiles); Hålsingborg, 74,947 (seaport).

Monetary unit: Krona.

Language: Swedish.

Religions: Swedish Lutheran, 99%; others, 1%.

HISTORY. Although ancestors of today's Swedes lived in the area as long as 5,000 years ago, little is known of Sweden before the 10th century. About 1000, King Olaf Skötkonung had united Sweden into a strong nation and established Christianity. In 1397 Sweden was united with Norway and Denmark under the Union of Kalmar. After the murder of several prominent Swedes by Christian II of Denmark in 1520, Sweden revolted under the leadership of Gustavus Vasa. Gustavus, elected King in 1523, founded the modern Swedish state and was the first European monarch to break relations with the Pope.

By the Treaty of Westphalia (1648) which concluded the Thirty Years' War (during which Gustavus Adolphus scored a number of brilliant military successes), Sweden acquired important German areas, including large portions of Pomerania. In 1700, Poland, Denmark and Russia united

against Sweden. When peace was finally concluded in 1721, Sweden gave up Livonia, Estonia, Ingria and parts of Finland. Sweden participated in the coalition against Napoleon (1805-07) but in 1809 Finland was lost to Russia. Following the ouster of King Gustavus IV in 1809, a constitutional law still in effect was adopted, after which Charles XIII, uncle of Gustavus IV, was elected King. Since Charles XIII was childless, one of Napoleon's marshals, Jean Bernadotte, was elected Crown Prince and took over effective control of the government, succeeding to the throne in 1818 as Charles XIV. By the Treaty of Kiel (1814), Sweden acquired Norway from Denmark in return for Pomerania. The union with Norway was peacefully dissolved in 1905.

Neutrality was maintained through both World Wars. Sweden did not join the North Atlantic Pact in 1949.

SOVEREIGN. Gustavus VI Adolphus, born Nov. 11, 1882, married (1) 1905, Princess Margaret Victoria (1882-1920); (2) 1923, Princess Louise Mountbatten (born 1889). To his first marriage was born Prince Gustavus Adolphus (born Apr. 22, 1906, killed in air crash Jan. 26, 1947), who was married in 1932 to Sibylla, Princess of Saxe-Coburg-Gotha; their offspring include a son, Carl Gustavus, the heir apparent, born April 30, 1946, and four daughters. Gustavus VI became King Oct. 30, 1950, on the death of his father, Gustavus V, who had reigned since 1907.

GOVERNMENT AND DEFENSE. Executive and judicial authority is vested in the King alone, but his resolutions must be taken in the presence of the Council of State (cabinet), headed by the Prime Minister; the Council is appointed by the King but is responsible to the Riksdag (parliament).

The Riksdag has a First Chamber of 150 members elected indirectly by the provincial, and in the large cities by the municipal, councils for eight years, one-eighth being renewed each year. The Second Chamber of 231 members is directly elected by popular vote for four years. There is universal suffrage for men and women over 21. The King can initiate legislation and can veto all bills except those relating to taxation.

Standings in the Second Chamber (elections of Sept. 16, 1956): Social Democrat 106, Liberal 58, Conservative 42, Agrarian 19, Communist 6.

Defense. Military service is compulsory from the ages of 18 to 47; the initial training period is 10 months. The King is commander in chief of all the armed forces. The army is well-equipped with the latest type weapons, many of them Swedish. The navy in June 1957 had 3 cruisers, 12 fleet destroyers, 15 escort vessels, 48 motor

torpedo boats, 21 submarines, 2 minelayers and numerous smaller craft.

The air force has modern jet aircraft, nearly all designed and built in Sweden.

SOCIAL AND ECONOMIC CONDITIONS. *Education.* Public elementary education has been free and compulsory since 1842. Illiteracy is practically unknown. In 1956, there were 833,000 pupils in regular elementary schools as well as 190,000 pupils in regular secondary schools. The three universities—Uppsala, Lund and Göteborg—and two other schools of university grade had 16,935 students in 1956. The state also provides a large number of special vocational and continuation schools. The national church is the Swedish Lutheran Church, of which the King is supreme administrator.

Agriculture. Milk, butter, meat, grain, potatoes and sugar beets are products of the broad fertile plains of the south; the north is limited to cattle raising and dairy farming. Recent production data are as follows, in thousands of metric tons:

	1954	1955	1956
Wheat	1,021	716	945
Rye	301	170	223
Barley	361	408	618
Oats	863	597	1,148
Mixed grain	657	528	715
Sugar beets	1,848	1,663	1,740
Potatoes	1,429	1,285	2,044

The 1956 livestock estimates showed 284,000 horses, 2,434,000 cattle, 157,000 sheep and 1,573,000 hogs. Butter production in 1956 was 83,000 metric tons; cheese, 50,600 tons; milk, 3,935,000 tons.

Industry. The highly specialized machine industry produces separators, motors, electrical machines and apparatus, agricultural machinery, ball bearings, telephone equipment and harbor works. Pig iron production in 1956 totaled 1,328,000 metric tons; raw steel, 2,404,000 tons.

There are also large woolen, glass and porcelain industries. Shipyards build for both Swedish and foreign fleets. In 1956, 80 vessels of 489,570 gross tons were launched. The timber and woodworking industries are extensive.

Trade. Statistics of foreign trade are as follows, in millions of kronor:

	1954	1955	1956
Exports	8,196	8,933	10,067
Imports	9,192	10,305	11,434

Leading exports in 1956 were wood pulp (17%), machinery and apparatus (13%), timber (12%) and iron ore (10%). Leading customers were Britain (18%), western Germany (14%), Norway (8%) and the Netherlands (6%). Leading suppliers were western Germany (22%), Britain (14%), the U. S. (10%) and Norway (4%). The principal imports included machinery,

petroleum and products, textiles and clothing and automobiles.

Communications. On June 30, 1956, the merchant marine comprised 1,223 ships (100 tons and over) of 2,922,092 gross tons, largely efficient motor vessels. The highly developed railway network totaled 10,100 miles in 1956 and there were about 57,209 miles of highway, mostly improved. By means of ferry steamers, Swedish state railways are connected directly with both Germany and Denmark.

Finance. Recent data on current account are as follows, in millions of kroner:

	1955-56	1956-57	1957-58*
Revenue	9,909	11,309	11,487
Expenditure	9,234	10,603	10,277

* Budget estimate.

The public debt was 16,966,000,000 kr. on Dec. 31, 1956.

NATURAL FEATURES AND RESOURCES; CLIMATE. Sweden, with extreme length of about 980 miles and breadth of 310 miles, slopes eastward and southward from its peak elevation in the Kjölen mountains along the Norwegian border. In the north are mountains and many lakes. To the south and east are central lowlands, and south of them are fertile areas of forest, valley and plain. Along Sweden's rocky coast, chopped up extensively by bays and inlets, are many islands, the largest of which are Gotland (1,212 sq. mi.) and Öland (518 sq. mi.). The country is landlocked to the north.

Minerals. Sweden's iron ore deposits (metal content 60%) are among the world's richest. Those in central Sweden produce principally for domestic use, while the ones in Lapland to the north are worked largely for export, with much of the output being shipped through the Norwegian port of Narvik. Production in 1956 was 18,947,000 metric tons. Gold production was 115,740 troy oz. Other major minerals are copper (32,187 tons), lead (23,348 tons), arsenic ore (45,200 tons), manganese ore (29,250 tons) and silver (2,048,000 oz.). Coal production (294,000 tons in 1956) is comparatively small; imports of several million tons a year are therefore necessary. Deposits of uranium have been reported.

Forests and Fisheries. About 60 per cent of Sweden is forested, mostly conifers, and there are vast forest products industries in the north. Sweden supplies a large percentage of the world's mechanical and chemical pulp. In 1955, 3,903,800 metric tons of wood pulp, 366,000 tons of newsprint, 936,000 tons of other paper and 212,000 tons of cardboard were produced.

The yield of the salt water fisheries varies considerably (in 1955, 209,000 metric tons valued at 133,000,000 kr.; in 1956, 174,000 tons valued at 127,000,000 kr.). About half the catch usually is herring;

cod, Baltic herring and mackerel are also taken in large quantities. The largest part (71% in 1955) of the yield comes from the west coast.

Climate. Sweden's climate is diversified. The warmest month is usually July, with a mean temperature of 62° in Stockholm. February is the coldest month, with a mean average below 32° for all Sweden (25.7° at Stockholm). Average annual rainfall in the north is 16.5 inches; in the south, 22.5 inches.

Switzerland (Republic) (Schweiz-Suisse-Svizzera)

Area: 15,941 square miles.

Population (est. Dec. 1956): 5,074,000 (Swiss, 91.2%; German, 3.6%; Italian, 3.1%; French, .9%; others, 1.2%—figures by place of birth).

Density per square mile: 318.3.

President (1957): Hans Streuli.*

Principal cities (est. Dec. 1956): Zürich, 422,000 (textiles, banking); Basel, 197,000 (rail center; Rhine port); Geneva, 164,400 (intellectual center); Bern, 158,700 (federal capital).

Monetary unit: Swiss franc.

Languages: German, 71.9%; French, 20.4%; Italian, 6.0%; Romansch, 1.1%; others, .6%.

Religions: Protestant, 57%; Roman Catholic, 41%; Jewish, .4%; others, 1.6%.

* The vice president ordinarily becomes president the next year. Vice-president in 1957: Thomas Holenstein.

HISTORY. Swiss history is principally the story of the federation of various fiefs of the Holy Roman Empire into a single union for common defense. The process began in 1291, with the cantons of Uri, Schwyz and Nidwalden as the nucleus. Over the next 300 years, ten new cantons entered the federation, which nominally remained part of the Holy Roman Empire until the Treaty of Westphalia gave it independence in 1648.

The French revolutionary army succeeded in occupying Switzerland in 1798 and organized it as the Helvetic Republic, but Napoleon restored the federation in 1803. The Congress of Vienna (1815) declared Switzerland an independent, neutral state in perpetuity, and fixed the nation's borders as they exist today. Out of the brief Swiss civil war of 1847 came the democratic Constitution of 1848, which was influenced by the U. S. Constitution.

Switzerland maintained strict neutrality in World Wars I and II.

GOVERNMENT AND DEFENSE. Since the adoption in 1874 of their present Constitution, the Swiss have had a federation of 22 sovereign cantons. Each canton has its own legislature, executive and judiciary departments, with the right of veto over federal legislation through referendum.

The Federal Assembly has two houses—a Council of States of 44 members, two

from each canton, and a National Council of 196 members elected for four-year terms. The seven members of the Cabinet (Federal Council) are elected for four years by the Federal Assembly, which also elects the Swiss President from among its own members for a period of one year. The federal government is supreme in matters of war, peace and treaties, and regulates the army, railroads, postal service, mints and national bank note issues.

In peacetime, the highest Swiss army officer is a colonel. In wartime a commander in chief is named with rank of general. Since the army is a national militia, it maintains no standing forces, but military service is compulsory from the ages of 18 to 60, with an initial training period of about three months and an 11-day refresher course once a year. The force of men trained and physically fit is about 650,000. The air force has about 5,000 personnel and 400 planes.

SOCIAL AND ECONOMIC CONDITIONS. Primary education is compulsory, free and locally controlled. In 1953-54, primary schools had 518,050 pupils and secondary schools had 85,477. There are seven universities, with an enrollment of 12,413 students in 1954-55.

Religious freedom is guaranteed under the constitution. German, Italian and French were recognized as national languages in 1874, and Romansch, a dialect of the Alpine regions, was also made a national language in 1937.

With nearly a fourth of its land unproductive, and with half of it in pasture or forest area, Switzerland is dependent on imports for food supply. Wheat, potatoes, fruits, oats, barley, rye, sugar beets and grapes are grown, but stockraising and dairy farming account for three-fourths of the agricultural production. In 1957 there were 1,642,600 cattle, 1,160,000 hogs, 112,900 horses; (1955) 200,684 sheep, 112,463 goats. Production of cheese in 1955 was 56,400 metric tons; of butter, 25,200 tons.

Manufacturing is the principal economic activity, with more than 40 per cent of the population being sustained by manufactures or mechanical pursuits. Industry is conducted largely in small plants using highly skilled workers. Almost all the raw materials are imported, and products consist almost exclusively of high grade, expensive commodities. In 1956 there were 12,057 factories with 614,436 workers.

Manufactures include chemical products, machines, watches, textiles, aluminum, precision instruments, lumber, shoes and fine handmade embroidery. Chief agricultural industries are the manufacture of fine cheeses and condensed milk. With its many scenic attractions, Switzerland draws the heaviest and most profitable tourist trade in Europe.

Switzerland is dependent on foreign trade for its prosperity. Trade statistics are as follows, in millions of Swiss francs:

	1954	1955	1956
Exports	5,272	5,622	6,203
Imports	5,592	6,401	7,597

In 1956 the leading customers were western Germany (12%), the U. S. (10%), Italy (8%), France (6%) and Britain (5%). Leading suppliers were western Germany (24%), the U. S. (13%), France (11%), Italy (10%) and Britain (5%). Leading exports were machinery (21%), clocks and watches (20%), chemicals and drugs (14%), textiles and clothing (12%).

The Rhine, navigable from Basel to the North Sea, is the principal inland waterway. Railways built over rugged terrain entailing construction of many bridges and tunnels, total about 4,900 miles, mostly electrified. Road mileage is about 10,500.

Financial data in millions of Swiss fr.:

	1955	1956	1957*
Revenue	2,245.2	2,610.6	2,285.4
Expenditure	1,948.7	1,963.6	2,006.9

* Budget estimate.

The debt of the Confederation alone (excluding the railway debt) was 7,472,000,-000 fr. on Dec. 31, 1956.

NATURAL FEATURES; CLIMATE. Most of Switzerland comprises a mountainous plateau bordered by the great bulk of the Alps on the south and by the Jura Mountains on the northwest. Its greatest length is 226 miles, greatest width, 137 miles. About a fourth of the total area of Switzerland is covered by scenic mountains and glaciers.

The country's largest lakes, Geneva, Constance (Boden See) and Maggiore, straddle the French, German-Austrian and Italian borders, respectively.

The climate is temperate and varies greatly with altitude. The coldest month (January), for example, averages 31.8° at Basel, which is 909 feet in elevation, and 16.2° at Säntis, with altitude of 8,202 feet.

Syria (Republic)

(Al-Jamhourya as-Souriya)

Area: 70,014 square miles.

Population (est. Dec. 31, 1956): 4,025,165 (Arab, Armenian, Kurdish, Turkish, French).

Density per square mile: 57.5.

President: Shukri al-Kuwatli.

Premier: Sabri el-Assali.

Principal cities (est. 1955): Damascus, 408,774 (capital); Aleppo, 407,613 (northern trading center); (est. 1954) Homs, 293,643 (farming, silk); Hama, 172,988 (Bedouin trading center).

Monetary unit: Syrian pound (£S).

Languages: Arabic, Aramaic, French.

Religions (est. 1949): Moslem, 85%; Christian, 13.9%; Jewish, 1%; others, 1.1%.

HISTORY. Ancient Syria was conquered by Egypt about 1500 B.C., and after that by Hebrews, Phoenicians, Assyrians, Chaldeans, Persians and Greeks. From 64 B.C. until the Arab conquest in A.D. 636, it was part of the Roman Empire except during brief periods. The Arabs made it a trade center for their whole empire, but it suffered severely from the Mongol invasion in 1260 and fell to the Ottoman Turks in 1516. Syria remained a Turkish province until World War I.

A secret Anglo-French pact of 1916 put Syria in the French zone of influence. The League of Nations gave France a mandate over Syria after World War I, but the French were forced to put down several nationalist uprisings. In 1930, France recognized Syria as an independent republic, but still subject to the mandate. After nationalist demonstrations in 1939, the French High Commissioner suspended the Syrian Constitution. In 1941, British and Free French forces invaded Syria to eliminate Vichy control. During the rest of World War II, Syria was an Allied base. Again in 1945, nationalist demonstrations broke into actual fighting, and British troops had to restore order. Syrian forces met a series of reverses while participating in the Arab invasion of Palestine in 1948. After Mar. 30, 1949, when the government was overthrown by Husni Zayim, there were several army *coups d'état*. That of Nov. 29, 1951, was engineered by Col. Adib Shishakly. Elected President in July 1953, Shishakly was ousted on Feb. 25, 1954, by the army, which named Hachem Bey el-Attassi President. On Aug. 18, 1955, Shukri al-Kuwatly was elected President. **GOVERNMENT AND DEFENSE.** Under the 1950 Constitution, restored in 1954, legislative power is vested in a unicameral Parliament. Executive power is exercised by the President through the Premier and his Cabinet.

There is an army of about 65,000; a small air force and a navy with a few coastal vessels.

SOCIAL AND ECONOMIC CONDITIONS. Primary education is compulsory. In 1954 Syria had 2,595 primary and 212 secondary schools, with total enrollment of 373,478. There is a university at Damascus.

Agriculture and animal breeding are the main industries. Only half the land is arable, and only a third is actually cultivated. Most crops require irrigation. In 1955-56 Syria grew 1,051,000 metric tons of wheat and 462,000 tons of barley. Other leading crops include sorghum, olives, cotton, grapes, lentils and tobacco. Stock-raising is important among nomads.

Recent foreign trade data are as follows (in millions of U. S. dollars):

	1954	1955	1956
Exports	147.9	143.7	158.2
Imports	174.2	179.1	188.3

Leading exports in 1955 were raw cotton (50%), wool (7%) and sheep (6%). Principal customers were Lebanon (21%), France (20%) and Italy (10%); leading suppliers, Britain (13%), the U. S. (11%) and western Germany (10%).

In 1953 Syria had 4,332 miles of highway and, in 1955, 560 miles of railway.

NATURAL FEATURES; CLIMATE. Coastal Syria is a narrow plain. Back of that is a range of coastal mountains, and still farther inland is a steppe area. In the east is the Syrian Desert, and in the southeast next to Jordan is the Jebel Druze Range. The climate is subtropical, with rainfall averaging 50 inches on the coastal range but diminishing to less than four inches in parts of the desert. Summer temperatures at Aleppo range from about 75° at night to 100° during the day; winter temperatures, from freezing to 50°.

Thailand (Siam) (Kingdom)

(Muang Thai)

Area: 198,270 square miles.

Population (est. 1956): 20,686,000 (1937: Thai, 90%; Chinese, 3.4%; Indian and Malayan, 3.4%; others, 3.2%).

Density per square mile: 104.3.

Ruler: King Rama IX.

Prime Minister: Pote Sarasin.

Principal cities (census 1947): Bangkok, 620,830 (capital, chief port); Khon Kaen, 153,934 (trading center); Buri Ram, 129,000 (farming); Thonburi, 118,682 (market center).

Monetary unit: Baht.

Languages: Thai (Siamese), Chinese.

Religions (census 1947): Buddhist, 95%;

Moslem, 4%; others, 1%.

* Including about 2,500,000 of Chinese descent born in Siam.

HISTORY. The Siamese first began moving down into their present homeland from the Asiatic continent in the 6th century A.D., and by the end of the 13th century ruled most of the western portion. During the next 400 years, the Siamese fought sporadically with the Cambodians to the east and the Burmese to the west. The British obtained recognition of paramount interest in Siam in 1824, and in 1896 an Anglo-French accord guaranteed Siamese independence.

A coup on June 24, 1932, changed the absolute monarchy into a representative government with universal suffrage. Thus shorn of much power, King Prajadhipok abdicated in March 1935 in favor of his nephew, Prince Ananda Mahidol. After five hours of token resistance on Dec. 8, 1941, Siam yielded to Japanese occupation and became one of the springboards in World War II for the Japanese campaign against Malaya. After the fall of its pro-Japanese puppet government in July 1944, Siam pursued a policy of passive resistance

against the Japanese, and on Aug. 16, 1945, after the Japanese surrender, Siam repudiated the declarations of war it had made against Britain and the U. S. in 1942.

By a treaty signed with Britain and India Jan. 1, 1946, Siam renounced all wartime acquisitions of Malayan territory and agreed that no canal linking the Gulf of Siam with the Indian Ocean would be cut across Siamese territory without British concurrence.

RULER. Rama IX, who was born Dec. 5, 1927, second son of Prince Mahidol of Songkhla, succeeded to the throne on June 9, 1946, when his brother, King Ananda Mahidol, died of a gunshot wound. He was married on April 28, 1950, to Princess Kitiyakara; their son, Vajiralongkorn, born July 28, 1952, is heir apparent.

GOVERNMENT AND DEFENSE. Thailand is a constitutional hereditary monarchy. Under the 1932 Constitution, restored after the Dec. 1951 *coup d'état* to replace that of 1949, there is a unicameral Parliament, half nominated, half elected. The government is administered by the Prime Minister and his Cabinet, who are responsible to the Parliament.

The 1937 defense act made military service compulsory for a period of two years between the ages of 18 and 30. The army has about 30,000 men. There is a fair-sized air force. The navy in 1956 had 5 frigates and escort vessels and 4 submarines.

SOCIAL AND ECONOMIC CONDITIONS. Buddhist monasteries throughout Thailand control most of the elementary education in rural districts. In 1954 there were 19,331 state primary schools with 2,857,411 students and 267 state secondary schools with 96,300 students; private secondary schools had 110,797 students. There are 5 institutions of higher learning. Illiteracy (10 years and over) was 46.3% in 1947.

Almost 90 per cent of the population work at agriculture. Rice (1956-57: 8,009,000 metric tons) is the principal crop, the staple food and the leading export. It is the basis of Thailand's whole economy and the key to its prosperity. Next most important is rubber (exports 1956: 135,720 metric tons). Other products include coconuts, corn, tobacco, cotton, sesame, sugar cane and soybeans. Livestock, poor in quality and quantity, is used mainly for hauling. Manufacturing is of little importance. Domestic business is largely controlled by Chinese.

Recent trade statistics are as follows (in millions of U. S. dollars):

	1954	1955	1956*
Exports	283.4	335.1	335.2
Imports	311.7	333.8	361.9

* Provisional.

Chief exports in 1956 were rice (41%), rubber (22%) and tin (7%). Leading customers were Malaya and Singapore (29%),

the U. S. (25%) and Japan (9%); leading suppliers, Japan (17%), the U. S. (16%) and Hong Kong (16%).

There are good water routes which handle about 80 per cent of all internal traffic. Bangkok, the chief port, 25 miles up the Chaopaya River from the Gulf of Siam, handles about 80 per cent of the foreign trade. Railways under government ownership total 2,032 miles, and in 1954 there were about 4,700 miles of highway.

The 1957 budget estimated revenue at 5,120,000,000 baht, ordinary expenditure at 5,070,000,000 baht and capital expenditure at 1,274,100,000 baht.

NATURAL FEATURES AND RESOURCES; CLIMATE. Thailand, about three-fourths the size of Texas, supports most of its population in the central alluvial plain which is drained by the Chaopaya River and tributaries. There are small deposits of many important minerals, and some precious stones. Only tin, gold, tungsten and salt are in commercial production. Tin output in 1940 was 20,841 tons (10% of the world total), but production in 1956 was only 12,090 metric tons (tin-in-concentrates).

Almost 70 per cent of Thailand's total land area is forested. Teak, the main forest product, covers over one-third of this area, chiefly in the northern hill country. Other forest products of Thailand include thingan wood, ironwood, ebony, rattan and sticklac.

Fisheries, both ocean and river, ordinarily rank second to agriculture.

The climate is monsoonal, but the full force of the monsoons is broken by the western hills. Rainfall decreases from south to north. Humidity is always high, but temperatures fall as low as 40° in the November-February cool season. Inland temperatures often rise to 100°.

Trieste

This former free territory (293 sq. mi.) on the northeastern Adriatic was divided *de facto* between Italy and Yugoslavia under the provisions of a memorandum of understanding signed Oct. 5, 1954. Most of the area (202 sq. mi.) went to Yugoslavia; the smaller (91 sq. mi.) but far more densely populated part, including the city of Trieste, went to Italy.

The free territory had been created under the provisions of the Italian peace treaty of 1947 and was to be under U. N. protection. It proved to be impossible to implement the treaty provisions, and Yugoslav and Anglo-U. S. occupation forces had continued the occupation begun in 1945 of substantially the areas transferred to Yugoslavia and Italy, respectively, in 1954.

Tunisia (Republic)

Area: 48,332 square miles.

Population (census 1956)*: 3,782,480 (1946, by place of birth: Tunisian, 89.9%; French, 4.5%; Italian, 2.6%; others, 3%).

Density per square mile: 78.3.

President: Habib Bourguiba.

Principal cities (census 1956)*: Tunis, 410,000 (capital); Sfax, 65,635 (phosphate port); Sousse, 48,172 (seaport); Bizerte, 44,461 (seaport and naval base).

Monetary unit: Tunisian franc.

Languages: Arabic, French, Italian.

Religion: Predominantly Moslem.

* Preliminary figures.

HISTORY. Tunisia was settled by the Phoenicians and Carthaginians in ancient times. Except for an interval of Vandal conquest in A.D. 439-533, it was part of the Roman Empire until the Arab conquest of 648-69. Then it was ruled by various Arab and Berber dynasties until the Turks took it in 1570-74. The founder of the present dynasty, Hussein ben'Ali, was proclaimed sovereign by the occupation troops in 1705 and later succeeded in making the office hereditary, although subject to nominal Turkish sovereignty.

Throughout much of its history, Tunisia was essentially a pirate state, preying on Mediterranean shipping. In modern times, Italy became predominant economically in the area, but after French troops occupied the area in 1881, the Bey signed a treaty acknowledging a French protectorate.

Following the Allied landings in North Africa in 1942, Tunisia became a battleground with the Axis forces pinched between the British 8th Army advancing from Libya and the U. S., British and French forces from Algeria. The Axis units surrendered in May 1943, and Tunisia was turned over to the De Gaulle government.

Nationalist agitation forced France to grant internal autonomy to Tunisia in June 1955 and to recognize Tunisian independence and sovereignty in March 1956. Tunisia was admitted to the U. N. Nov. 12, 1956. The Constituent Assembly deposed the Bey on July 25, 1957, declared Tunisia a republic and elected Habib Bourguiba as the first President.

GOVERNMENT. A Constitution was being drafted in 1957 by the Constituent Assembly, which was elected by popular vote on March 25, 1956. In the interim the President is assisted by a Cabinet of state secretaries responsible to him. France is represented by an ambassador.

All 98 seats in the Constituent Assembly are held by the National Front headed by Habib Bourguiba, whose party is known as the *Néo-Destour*.

SOCIAL AND ECONOMIC CONDITIONS. In 1954, Tunisia's 729 public and 230

private schools had 264,530 pupils, about a fourth of them French and Italian. The Great Mosque at Tunis is a Moslem University.

Tunisia's population (by the 1946 census, 87.4 per cent Arab) is concentrated in the cities and on the coast. There are about 100,000 nomads.

Agriculture is the chief industry. Over a quarter of the arable land is in wheat (1956: 499,000 metric tons). Other important crops are barley, oats, corn, sorghum, beans and peas. Wine production in 1956 was 26,000,000 U. S. gallons. Average annual olive oil production is about 55,000 metric tons (1956: 95,000 tons). The Cape Bon region is largely devoted to citrus fruits, the southern oases to dates. In 1954 there were 3,352,100 sheep, 482,500 cattle, 1,853,000 goats and 202,200 camels.

Leading industries include flour milling, oil refining, lead smelting and distilling. Native industries include the spinning and weaving of wool, and the making of pottery and leather goods.

Tunisia, Algeria and France are under a single customs union for a number of products. Recent trade data are as follows (millions of francs):

	1953	1954	1955
Exports	39,103	44,477	37,140
Imports	60,121	59,268	63,199

Leading exports in 1955 were phosphates (15%), wheat (12%), iron ore (8%) and olive oil (7%). France took 55% of the exports and supplied 75% of the imports.

There were 5,600 miles of roads in 1954, 1,300 miles of railway in 1953. Tunis, Bizerte, Sousse and Sfax are principal ports.

NATURAL FEATURES AND RESOURCES; CLIMATE. Tunisia, at the northernmost bulge of Africa, thrusts out toward Sicily to mark the division between the eastern and western Mediterranean. It is mountainous in the north, covered by plains in the east, and projects southward to the Sahara area.

Tunisia's extremely rich deposits of phosphates are mined principally in the Gafsa and Kef regions. Production in 1956 was 2,076,600 metric tons. The iron ore is of good quality (55% metal content; production in 1956: 1,168,900 tons). Other minerals are lead (1956: 38,900 tons), zinc, mercury, manganese, copper, salt and poor-grade lignite.

The climate is Mediterranean with mean temperature extremes at Tunis of 52.7° and 79.2°. Annual rainfall ranges from 24 inches in the north to less than five inches in the south.

Turkey (Republic)

(Türkiye Cümhuriyeti)

Area: 296,185 square miles.

Population (est. 1956)*: 24,797,000
(Turkish, 94%; Greek, 2.2%; Bulgarian, 1.4%; Yugoslavian, .9%; others, 1.5%).†

Density per square mile: 83.7.

President: Celâl Bayar.

Premier: Adnan Menderes.

Principal cities (census 1955)*: Istanbul, 1,214,616 (chief port, commercial center); Ankara, 453,151 (capital); Smyrna, 286,310 (seaport); Adana, 172,465 (agricultural center); Bursa, 131,336 (silk, carpets); Eskişehir, 122,755 (trading center).

Monetary unit: Turkish pound (₺).

Languages: Turkish, Greek, Bulgarian.

Religions: Moslem, 98.6%; others, 1.4%.

* Preliminary figures. † 1935, by place of birth.

HISTORY. The Ottoman Turks first appeared in the early 13th century A.D. Under the leadership of their Sultans, they gradually spread their hegemony over most of the Near East and the Balkans, capturing Constantinople in 1453 and storming the gates of Vienna in the 17th century. At the height of its power, the empire stretched from the Persian Gulf to the frontiers of Poland and from the shores of the Caspian Sea to Oran in Algeria.

The defeat of the Turkish navy at Lepanto in 1571 by the Holy League and of Turkish forces besieging Vienna in 1683 portended the decline of Ottoman power, reducing Turkey to the status of a pawn in Europe's political maneuvers. Russia moved into the Balkans in the 18th century and made herself official protector of the Balkan Christians. Fear of a Russian drive on Constantinople prompted England and France to declare war on Russia, and the Crimean War (1853-56) followed. As a result of the Russo-Turkish war (1877-78), Bulgaria became practically independent, and Rumania and Serbia threw off their nominal allegiance to the sultan. Further defeats were suffered by Turkey in a war with Italy (1911-12) and in the Balkan Wars (1912-13). Meanwhile, a revolt led by the Young Turks, an organization of youthful liberals, had forced the abdication of Sultan Abdul-Hamid in 1909 and established a constitutional regime.

On Aug. 2, 1914, at the outbreak of World War I, a secret alliance was signed between Germany and Turkey, whose army was advised by a German military mission, and in September the Allies declared war on Turkey. Turkish forces successfully defended the strategic Dardanelles, but British forces seized Palestine, Mesopotamia and Syria; and the Hejaz revolted. By 1918 Allied forces held the territory along the Dardanelles and the Bosphorus, and later Greek forces occupied Smyrna.

In 1919 the new Nationalist party, headed by Mustafa Kemal, was organized

to resist the Allied occupation, and in 1920 a National Assembly elected Mustafa Kemal President of both the Assembly and the government. Under his leadership, the Nationalist government was recognized by foreign powers, the Greeks were driven out of Smyrna, and other Allied forces were withdrawn. The present Turkish boundaries (with the exception of Alexandretta, ceded to Turkey by France in 1939) were fixed by the Treaty of Lausanne (1923) and later negotiations. The caliphate and sultanate were separated and the sultanate abolished on Oct. 1, 1922. On Oct. 29, 1923, Turkey formally became a republic with Mustafa Kemal, who took the name of Kemal Atatürk, as its first President. He proceeded to carry out an extensive program of reform, modernization and industrialization.

The Montreux Convention (1936) gave Turkey sole responsibility for the defense of the Dardanelles.

General Ismet İnönü was elected to succeed Kemal Atatürk on the latter's death in 1938 and was re-elected in 1939, 1943 and 1946, but was defeated in 1950 and succeeded by Celâl Bayar. On Oct. 19, 1939, a mutual assistance pact was concluded with Britain and France. Turkey followed a neutral course during most of World War II, but on Feb. 23, 1945, she declared war on Germany and Japan, but took no active part in the conflict. After the abrogation of the Soviet-Turkish non-aggression pact in March 1945, Turkey was subjected to Soviet pressure for a share in the control of the Dardanelles. To assist Turkey in effecting modernization necessary for the preservation of its national integrity, the U. S. in 1947 agreed to advance \$100,000,000, all of which was to be used for the armed forces or to a lesser extent for economic projects directly related to Turkish defense. Turkey also received aid under the European Recovery Program. It became a full member of NATO in 1952.

GOVERNMENT AND DEFENSE. The Constitution, as amended in 1937, defines the state as "republican, nationalist, populist, étatist, secular, and revolutionary." The President is chosen from the deputies of the National Assembly; his term of office is identical with the life of each Assembly. The 541 members of the Assembly are elected by universal suffrage for a term of four years. According to the Turkish Constitution, the Assembly exercises the executive power through the President and the Council of Ministers (cabinet) which is appointed by him.

The Republican People's party, which had been in power since 1923, was overwhelmingly defeated in free elections held May 14, 1950, by the Democratic party. The latter was retained in office by an even wider margin in elections held May 2, 1954,

in which it won 503 seats in the Assembly. Centralization is the basis of the governmental system. The pre-republic judicial system, based on Sunni Moslem law, was replaced in 1926 by a new system based on the Swiss civil code.

Defense. Military service is compulsory from 20 to 45; the initial training period is three years. The strength of the army was about 300,000 in 1957.

Large purchases of modern material were made during World War II, and additional armaments were received from the U. S. after the war. The navy in 1957 had 1 battle cruiser, 10 fleet destroyers and 12 submarines, in addition to smaller craft, including a number of former U. S. and British minesweepers. A regimental combat team of 5,000 men was dispatched to Korea in 1950.

SOCIAL AND ECONOMIC CONDITIONS.

Education. Elementary education is nominally obligatory from 7 to 12. Only 24.2% of the whole population could read and write in 1945, but 44.6% of those over 10 were literate in 1950. In 1954, there were 18,058 primary schools with 1,749,517 pupils and 620 secondary schools and *lycées* with 128,777 pupils. In 1952-53 there were 33 institutions of higher learning with 26,345 students. The Latin alphabet replaced the Arabic script in 1928.

Agriculture and Industry. Agriculture is the principal economic activity, engaging about 65 per cent of the population. Only about 20 per cent of the land is under cultivation, but the government has made great efforts to modernize and improve farming. The most important cash crop is tobacco (1955: 109,000 metric tons). Cotton (1956: 165,000 metric tons, ginned) is grown in the south of Asia Minor while figs come exclusively from the Smyrna region. Grain crops, with 1956 production in metric tons, include wheat, 6,612,000, and barley, 2,900,000. Turkey is a leading exporter of olive oil; the Brusa region and the Ionian coast are the principal areas of cultivation. Opium poppies are grown in the Smyrna, Malatia and Tokat regions.

Turkey is rich in livestock. The most important animal is the goat, of which there were 21,045,000 in Dec. 1953, including the valuable Angora, which thrives on the uplands of the plateau. There were also (Dec. 1955) 26,444,000 sheep, 11,059,000 cattle and (Dec. 1954) 1,214,000 horses. Wool production in 1956 was 20,000 metric tons, clean basis.

Staple industries have been established in iron, steel, textiles, paper, glass, sugar and cement. In 1956, 217,200 metric tons of pig iron and 192,000 tons of steel were produced. A large proportion of the factories are government-operated. Istanbul is the major industrial area.

Trade. Turkey's foreign trade was as follows, in millions of Turkish pounds:

	1954	1955	1956
Exports	938	877	854
Imports*	1,339	1,393	1,141

* Includes military equipment imported under U. S. military assistance program.

Principal customers in 1956 were the U. S. (20%), western Germany (17%), Italy (10%) and Britain (8%). Leading suppliers were western Germany (24%), the U. S. (21%), Britain (8%) and Italy (6%). Chief exports were tobacco (31%), hazelnuts (10%), cotton (9%) and chrome (8%); leading imports, machinery, iron, steel, fuel and oil.

Communications and Finance. In June 1956, Turkey had a merchant fleet of 284 vessels (100 tons and over) aggregating 601,485 gross tons. The length of railways (1955) was 4,792 miles. Highway mileage was 28,415 in 1954.

Recent public finance data are as follows, in millions of Turkish pounds:

	1955-56*	1956-57*	1957-58*
Revenue	2,789	3,325	4,007
Expenditure	2,941	3,325	4,007

* Budget estimate.

The public debt, consolidated and floating, on Aug. 31, 1956, was £T3,707,446,000. **NATURAL FEATURES AND RESOURCES; CLIMATE.** Turkey is divided into two natural areas by the historic waterway formed by the Dardanelles, the Sea of Marmara and the Bosphorus.

Turkey in Europe comprises an area about equal to the state of Massachusetts. It is hilly country drained by the Maritsa River and its tributaries. Almost all the population is concentrated in and near the two important towns, Istanbul (Constantinople) and Edirne (Adrianople). Turkey in Asia, or Anatolia, about the size of Texas, is roughly a rectangle in shape with its short sides on the east and west. Its center is a treeless plateau rimmed by mountains.

Minerals and Forests. Turkey's rich mineral resources are still comparatively unexploited. Deposits of copper in the large field at Arghana, near the Iraq-Syrian frontier, have been estimated at 1,600,000 tons (1956 output: 24,720 metric tons). Turkey is also relatively rich in coal, with large deposits in the Eregli region on the Pontic coast some 150 miles from Istanbul (1956 output: 3,720,000 tons). A virtual world monopoly is enjoyed in meerschaum, found in the Eskisehir district. Other important minerals include chromite (1955: 649,140 tons), petroleum (1955: 1,200,000 barrels), manganese ore (1955: 50,100 tons), iron ore (metal content 65%) (1955: 760,080 tons), emery and antimony.

Climate. Along the coast from Antioch to the Dardanelles the climate is Mediter-

ranean, with rainy winters and dry summers. Thence to the Bosphorus it is transitional to the type of climate with heavy year-round rainfall. Semitropical fruits and tea may be grown in the region beyond Trebizond on the Black Sea. The western plateau has a harsh steppe climate, with cold winters, hot summers and scanty rainfall, while the eastern plateau exhibits a transition from steppe to alpine climate. Istanbul has a mean annual temperature of 57° (maximum 99°, minimum 17°) and average yearly rainfall of 28.3 inches.

Union of Soviet Socialist Republics

Area: 8,602,700 square miles.

Population (est. April 1956)*: 200,200,000 (1939: Great Russian, 58.4%; Ukrainian, 16.6%; Byelorussian, 3.1%; Uzbek, 2.9%; Tartar, 2.5%; Kazakh, 1.8%; Armenian, Azerbaijani, Georgian, each 1.3%; more than 100 others, 10.8%).

Density per square mile: 23.3.

Chairman of Presidium of Supreme Council: Klementi E. Voroshilov.

Premier: Nikolai A. Bulganin.

Principal cities (est. April 1956)*: Moscow, 4,389,000 (capital); Leningrad, 2,814,000 (industrial center, shipbuilding); Kiev, 991,000 (industrial center, Ukraine); Baku, 901,000 (oil center, Azerbaijan); Kharkov, 877,000 (iron and steel, coal); Gorki, 876,000 (industrial, transportation center); Tashkent, 778,000 (textiles, tobacco); Kuibyshev, 760,000 (industrial center, Volga port); Novosibirsk, 731,000 (Siberian industrial center); Sverdlovsk, 707,000 (Ural industrial center); Tbilisi, 635,000 (building materials, tobacco); Stalino, 625,000 (coal, metallurgy).

Monetary unit: Rouble.

Languages: See Population, above.

Religions: Russian Orthodox (predominant), Moslem, Roman Catholic, Jewish, Lutheran.

* Official estimate of the Central Statistical Board of the Soviet Council of Ministers.

HISTORY. The history of Russia begins with the perhaps legendary figure of the Viking Rurik, who according to tradition came to Russia in A.D. 862 and founded the first Russian dynasty in Novgorod. The various tribes were united by the spread of Christianity in the 10th and 11th centuries; Vladimir "the Saint" was converted in 988. During the 11th century the grand dukes of Kiev held such centralizing power as existed. In 1240 Kiev was destroyed by the Mongols, and the Russian territory was split into numerous smaller dukedoms, out of which three large centers emerged—Galicia, Moscow and Novgorod. The early dukes of Moscow extended their dominions through their office of tribute collector for the Mongols.

In the late 15th century, Ivan III, the reigning duke, acquired the rival kingdoms of Novgorod and Tver and threw off the Mongol yoke. Ivan IV, the Terrible

(1533–84), first Muscovite duke to assume the title of Tsar, is considered to have founded the Russian State. He crushed the power of rival princes and boyars (great land-owners), but Russia remained largely medieval until the reign of Peter the Great (1682–1725), grandson of the first Romanov Tsar, Michael (1613–45). Peter made extensive reforms aimed at Westernization, and through his defeat of Charles XII of Sweden at the Battle of Poltava (1709), he extended Russia's boundaries to the west. Catherine the Great (1762–96) continued Peter's Westernization program and also expanded Russian territory, acquiring the Crimea and part of Poland. During the reign of Alexander I (1801–25), Napoleon's attempt to subdue Russia was defeated (1812–13), and new territory was gained, including Finland (1809) and Bessarabia (1812). Alexander was the originator of the Holy Alliance which crushed for a time Europe's rising liberal movement. During the century between the Napoleonic Wars and World War I, a few reforms were introduced; however, the autocratic power of the Tsars remained.

During the reign of Alexander II (1855–81), Russia's borders were pushed to the Pacific and into central Asia. Serfdom was abolished in 1861, but heavy restrictions were imposed on the emancipated class. Revolutionary strikes following Russia's defeat in the war with Japan forced Nicholas II (1894–1917) to grant a representative national body (Duma), elected by narrowly limited suffrage. It met for the first time in 1906. Nicholas continued in his reactionary course, however, and the overwhelmingly liberal Duma had little or no influence in the government.

World War I demonstrated the corruptness and inefficiency of the tsarist regime, although the call of patriotism held the poorly equipped army together for a time. Disorders broke out in Petrograd (now Leningrad) in March 1917, and, following the winning over of the Petrograd garrison, the revolution was in full swing. Nicholas was forced to abdicate under pressure from the Duma and was later killed by the revolutionists. A provisional government was formed, composed of both conservative and radical elements. This government, under the successive premier-ships of Prince Lvov and Alexander Kerensky, a Menshevik or moderate socialist, soon lost ground to the radical or Bolshevik wing of the Socialist Democratic Labor party. Finally, on Nov. 7, 1917, came the Second Revolution, engineered by Nikolai Lenin and Leon Trotsky and their small but well-disciplined Bolshevik following in the Petrograd Soviet. The government was turned over the next day to the Congress of Soviets (councils of soldiers, peasants and workers), which vested the government in a Council of People's Commissars

with Lenin as Premier and Trotsky as Foreign Minister. The humiliating Treaty of Brest-Litovsk (March 3, 1918) concluded the war with Germany, but civil war and intervention by foreign powers prevented the new Communist government from gaining control of all Russia until 1920. A brief war with Poland occurred in 1920, but it resulted in Russian defeat.

On July 6, 1923, the vast territory under Soviet rule—previously an inchoate mass whose constituent parts were changing constantly—became the Union of Soviet Socialist Republics, which was formed by the union of the Russian S.F.S.R. and the Ukrainian, Byelorussian and Transcaucasian S.S.R.'s.

The sudden death of Lenin (Jan. 21, 1924) precipitated an intraparty struggle between the group led by Joseph Stalin, General Secretary of the party, and the opposition, led by Trotsky, which favored not only swifter socialization at home but fomentation of revolution abroad. In 1927, Trotsky and other opposition leaders were expelled from the party and exiled. The first Five-Year Plan (1928-32) called for gradual, progressive increase in industrial and agricultural production. Its collectivization program was opposed by the Kulaks, or wealthier peasants, who were vigorously suppressed. Purges carried out in 1936-38 removed many prominent leaders of the Revolution and top army officers.

Soviet foreign policy—first featured by friendship with Germany and antagonism toward England and France and then, after Hitler's rise to power in 1933, by participation in the League of Nations and an anti-Fascist program—took another abrupt turn on Aug. 24, 1939, with the signing of a Soviet-German nonaggression pact. Territory seized from Poland (Sept. 1939) became part of the Ukrainian and Byelorussian S.S.R.'s; that secured from Finland at the conclusion of the Finnish war of 1939-40, part of the Karelian S.S.R. set up March 31, 1940; that secured from Rumania (Bessarabia and northern Bukovina), part of the Moldavian S.S.R. set up Aug. 2, 1940; and finally the formerly independent states of Estonia, Latvia and Lithuania, occupied in June 1940, were absorbed into the U.S.S.R. as the 14th, 15th and 16th Soviet Republics. The latter annexations have not been recognized by the United States, Britain, and the majority of other nations.

Immediately following the German attack (June 22, 1941), all necessary powers for the defense of the state were vested in the State Defense Council headed by Stalin, who had taken over the post of Premier on May 6. The Germans quickly seized approximately 500,000 square miles of Soviet territory, but Soviet forces resisted stubbornly, aided by increasing amounts of matériel from the U. S. and

Britain. The great Soviet counteroffensive in the Stalingrad area (Nov. 1942-Feb. 1943) marked the turning point. Soviet troops gradually pushed the Nazis back and unleashed their final great offensive on Jan. 12, 1945. The nonaggression pact with Japan (1941) was denounced in April 1945, and, following the declaration of war on Japan (Aug. 8, 1945), Soviet Far Eastern forces quickly occupied Manchuria, Karafuto and the Kuriles.

After the war, with its eastern European satellites drawn together into a solid bloc in opposition to the western democracies, the Soviet Union launched a full-scale political offensive against the non-Communist world. The western powers, however, countered the Soviet blockade of Berlin with a highly effective "airlift," completed the unification of western Germany and went on to unite western Europe into opposition to Communist aggression through the North Atlantic Pact.

Stalin died on Mar. 6, 1953. The next day Georgi M. Malenkov succeeded him as Premier. Malenkov's chief rivals for power—L. P. Beria, V. M. Molotov, N. A. Bulganin and L. M. Kaganovich—were named First Deputy Premiers. The first evidence of the expected intraparty struggle for power was revealed by the announcement on July 10, 1953, of the purging of Beria. He was executed on Dec. 23, 1953. His demise was accompanied by a rise in importance of N. S. Khrushchev, First Secretary of the Communist party. On Feb. 8, 1955, Malenkov was demoted and replaced as Premier by Bulganin, who was formerly Defense Minister. In July 1957 Khrushchev climaxed his rise to power by removing Molotov, Malenkov, Kaganovich and several others from the governing group.

GOVERNMENT. Under the Constitution of 1936, the Soviet Union is "a Socialist State of Workers and Peasants" whose highest organ is the Supreme Council of the Union, which exercises legislative authority. It consists of two co-equal Houses—the Council of Nationalities, in which each constituent republic has 25 representatives, each autonomous republic 11, each autonomous oblast five, and each national okrug one (total 639); and the Council of the Union, elected on a nationwide basis with one representative for each 300,000 of population (total membership 708). All representatives are elected for four-year terms; the last election was held on Mar. 14, 1954. Elections amount to a blanket endorsement (or rejection) of a single list of candidates already nominated by the Communist party, youth organizations, collective farms and trade unions. The only election in the Western sense of the word takes place in the selection of the nominees by these groups. All citizens over the age of 18 are enfranchised.

The Presidium of the Supreme Council acts as a directive body between the sessions of the Supreme Council. It has a Chairman (sometimes referred to as the Soviet President), 15 Vice Chairmen (one for each constituent republic), a Secretary and 15 members, all elected by the Supreme Council.

Details concerning the constituent republics of the U.S.S.R. are as follows:

Republic and capital	Area sq. mi.	Population Est. April 1956* (thousands)
Russian S.F.S.R. (Moscow)	6,592,443†	113,200†
Ukraine (Kiev)	232,618	40,600
Kazakhstan (Alma Ata)	1,063,242	8,500
Byelorussia (Minsk)	80,154	8,000
Uzbekistan (Tash- kent)	157,336	7,300
Georgia (Tbilisi)	29,488	4,000
Azerbaijan (Baku)	33,089	3,400
Lithuania (Vilnius)	25,174	2,700
Moldavia (Chisinau)	13,050	2,700
Latvia (Riga)	24,903	2,000
Kirghizia (Frunze)	76,023	1,900
Tadzhikistan (Sta- linabad)	55,058	1,800
Armenia (Erivan)	11,506	1,600
Turkmenistan (Ash- khabad)	187,181	1,400
Estonia (Tallinn)	17,413	1,100

* Official estimate of the Central Statistical Board of the Soviet Council of Ministers. † Including the Karelo-Finland S.S.R., incorporated into the R.S.F.S.R. in July 1956.

The highest executive and administrative power is exercised by the Council of Ministers (formerly People's Commissars) appointed by the Supreme Council and headed by a Chairman (Premier) and the Vice Chairmen. It issues decrees and executive orders on the basis of laws in operation and supervises their execution. The administrative machinery is necessarily vast and complicated, since it is responsible not only for the ordinary administrative functions of government, but also for operation of enterprises.

Postwar territorial acquisitions include the Carpatho-Ukraine (12,617 sq. mi.) obtained from Czechoslovakia June 29, 1945, incorporated into the Ukrainian S.S.R.; the Republic of Tannu Tuva in central Asia (64,000 sq. mi.) incorporated early in 1945 into the R.S.F.S.R.; Karafuto or southern Sakhalin (13,935 sq. mi.) and the Kurile Islands (3,944 sq. mi.), occupied by Soviet troops in Aug., 1945, and incorporated into the R.S.F.S.R.; the northern part of eastern Prussia (about 7,000 sq. mi.), placed under *de facto* Soviet administration at the Potsdam Conference and incorporated into R.S.F.S.R.; the Petsamo district of Finland, obtained *de jure* under the 1947 treaty and incorporated into the R.S.F.S.R.; and Poland east of the Curzon Line (69,860 sq. mi.), under terms of the

Soviet-Polish treaty of Aug. 16, 1945, incorporated into the Ukrainian and Byelorussian S.S.R.'s.

COMMUNIST PARTY. The only political party permitted to exist in the Soviet Union is the All-Union Communist party, which claimed 7,215,505 members in Feb. 1956. Its organization parallels the entire governmental and economic structure of the country and guides all important action through instructions from the central organs to party members who occupy most of the important political and economic positions. Its highest organ is the All-Union Party Congress, which meets irregularly. The Congress elects a Central Committee (133 members and 122 alternates), which in turn elects (1) an executive body (Presidium), (2) a Secretariat headed by a First Secretary (N. S. Khrushchev) and (3) a Committee of Party Control.

Members of the Presidium of the Central Committee following its reorganization in July 1957 were N. S. Khrushchev, N. A. Bulganin, K. E. Voroshilov, A. I. Mikoyan, A. I. Kirichenko, M. A. Suslov, A. B. Aristov, N. I. Byelayer, L. I. Brezhnev, Mme. E. A. Furtseva, N. G. Ignatov, A. L. Kozlov, Otto Kuusinen, N. M. Shvernik, G. K. Zhukov; candidate members, N. A. Mukhlitdinov, P. N. Pospelov, D. S. Korotchenko, J. E. Kalnberzin, A. P. Kirilenko, A. N. Kosygin, K. T. Mazurov, V. P. Mazavanadze, M. G. Pervukhin.

DEFENSE. The land, air and sea forces are under control of the Defense Ministry. Military service is compulsory; the initial training period varies from 2 to 5 years. The armed forces, which were estimated to have reached a peak of more than 15,000,000 men in 1945, numbered between 4,350,000 and 4,600,000 men in 1956, and were believed to have been reduced to approximately 3,400,000 by 1957. The strength of the army, including MVD and MGN troops (secret police organizations with paramilitary formations), was between 2,800,000 and 3,200,000 in 1956. The air force had between 750,000 and 800,000 men and 20,000 planes, including advanced models of jet fighters and bombers. The navy had between 600,000 and 750,000 men.

Information about the Red fleet is as vague as that about the army and air force. In Dec. 1956 it was believed to have 3 battleships, 32 cruisers, 150 destroyers, 250 frigates and escort vessels, 475 submarines, and many coastal and river craft, patrol vessels, minesweepers and various other small ancillary craft. Naval construction was emphasized in postwar five-year plans. **SOCIAL AND ECONOMIC CONDITIONS.** **Education.** The school system throughout the country is based upon uniform text books and the same syllabus, although a number of hours are allowed for native language, literature and history in the

non-Russian schools. All schools are state controlled, and compulsory education begins at the age of seven. Coeducation is being abolished and separate schools established for boys and girls. The boys' curriculum stresses military training; the girls', housework. Enrollment in primary and secondary schools in 1954-55 was 39,000,000. Under the Defense Ministry are the Suvorov military schools, established for the training of future officers. In 1955-56, 765 institutions of higher learning had 1,870,000 students, including 1,230,000 taking correspondence courses. Literacy in Russia was estimated at over 90% in 1950.

Agriculture. Formerly an agricultural country, the Soviet Union has grown since about 1920 into an industrial-agricultural power, with agriculture making great advances at the same time. The total area under cultivation was 259,500,000 acres in 1913, 291,600,000 acres in 1929, 361,361,000 acres in 1950 and 458,900,000 acres in 1955.

The Union's diverse climate permits the growing of the most varied crops, ranging from the temperate to the subtropical. Under the fourth Five-Year Plan, grain production increased to 124,700,000 metric tons in 1950 (a 5% increase over the pre-war average) and was to have been increased to 187,000,000 tons under the fifth Five-Year Plan (1951-55). This target was not reached, however, and the 1955 crop probably did not exceed 150,000,000 tons. Moreover, that figure represented the standing crop; the amount actually harvested and made available for consumption was placed at 103,000,000 tons as compared with 79,800,000 tons in 1950.

Large increases in the production of other crops were projected, and in many cases attained, under the fourth and fifth Five-Year Plans; and further increases were projected under the sixth Five-Year Plan (1956-60).

The progress of the livestock industry during the fifth Five-Year Plan was particularly disappointing.

Industry. Almost all industry in the Soviet Union is carried on by organizations owned or controlled by the state. Industrialization of the country has been a major objective of its leaders. Completion of the first two Five-Year Plans (1928-32, 1933-37) and of most of the third (1937-42) saw a great increase in the volume and versatility of Soviet industry.

The large-scale evacuation of plants to the East and the construction of new plants there during World War II, coupled with the eastward orientation of industry prior to the war, has shifted the balance to newly developed regions in Central Asia and Siberia from the Moscow-Leningrad area and the Ukraine. The new regions are now the center of Soviet industrial power,

accounting for almost all magnesium and aluminum production, and more than 60 per cent of the pig iron and steel production. The production of consumers' goods continues to be subordinate to the production of heavy capital equipment.

Large increases in production were reported under the fourth and fifth Five-Year Plans and further increases were projected under the sixth Five-Year Plan. The following table shows production of key items in 1940 and 1956 and planned production in 1960, in thousands of metric tons:

	1940 Actual	1956 Actual	1960 Target
Pig iron	14,900	35,800	53,000
Steel	18,300	48,600	68,300
Rolled metal	13,100	37,800	52,700
Cement	5,700	24,900	55,000
Cotton textiles	3,954*	5,500*	7,270*
Motor vehicles	145†	465†	650†
Tractors	32‡	184‡	322‡
Electricity	48‡	192‡	320‡

* Millions of meters. † Thousands of units. ‡ Billions of kw.h.

Employment in 1955 totaled 48,400,000 (31,200,000 in 1940) of whom 17,400,000 (11,000,000 in 1940) were employed in industry.

ANIMAL INDUSTRY (millions of head)

	1941*	1951*	1955†
Cattle	54.5	57.1	67.1
Cows	27.8	24.3	29.2
Hogs	27.5	24.4	52.2
Sheep	79.9	82.6	125.0
Goats	11.7	16.4	17.6

* Jan. 1. † Oct. 1.

Foreign Trade. Soviet foreign trade is a state monopoly, and foreign goods are purchased in accordance with an over-all plan conducted under the supervision of the Foreign Trade Ministry.

No complete trade statistics have been issued since 1938. The U. N. Economic Commission for Europe estimated total trade (exports and imports) at \$6,250,000,000 in 1954. Trade with countries of the Communist group totaled \$4,900,000,000, including \$1,100,000,000 with eastern Germany, \$720,000,000 with Czechoslovakia and \$660,000,000 with Poland.

According to official reports, the main exports in 1955 were machines and equipment 22.1%; metals 15.2%; cotton 11.3%; grain 10.3% and petroleum and products 6.4%; chief imports, machines and equipment 33.0%; textile raw materials 6.0%; metals 5.3%; ores and concentrates 4.2% and meat 4.2%.

Communications. According to *Lloyd's Register of Shipping*, the merchant marine on June 30, 1956, had 1,228 ships (100 tons and over) of 2,635,961 gross tons. Merchant ship construction has been subordinated to naval construction under the postwar five-year plans. The principal ports are

Leningrad on the Gulf of Finland, Murmansk and Archangel on the Arctic Ocean and White Sea, respectively; Vladivostok on the Sea of Japan; and the Black Sea ports of Odessa, Sevastopol, Novorossisk and Batum. River and canal transport is extremely important. In 1950 there were about 75,000 miles of navigable rivers and canals.

Railway mileage was officially placed at 74,955 in 1955, over one-third double-tracked. In that year railways carried 1,641,400,000 passengers and 1,267,000,000 metric tons of freight. Under the sixth Five-Year Plan, over 4,000 mi. of new track were to be constructed—twice that constructed during 1951–55—and 4,100 mi. of single track were to be doubletracked and over 5,000 mi. were to be electrified. Highway mileage (1945) totaled 849,520; hard-surfaced roads totaled 128,500 in 1955.

Air traffic is assuming great importance, especially in the central Asiatic portion of the U.S.S.R. Prior to World War II, the network of air routes covered 69,845 miles; in 1950 the estimated length was 109,000 miles, over which some 2,000,000 passengers were carried (300,000 in 1938). Moscow is connected with the capitals of all the Union republics by air service. There are regular services to the Far East and Europe. *Finance.* Recent financial data are, in billions of roubles (budget estimates):

	1955	1956	1957
Revenue	590.2	592.8	614.8
Expenditure	563.5	569.6	603.8

The budget includes charges for the financing of industry, transportation, agriculture and commerce—items which ordinarily are handled through private channels in other countries.

NATURAL FEATURES AND RESOURCES;

CLIMATE. The U.S.S.R. is the largest unbroken political unit in the world, occupying more than one-seventh of the land surface of the globe. The greater part of its territory is a vast plain stretching from eastern Europe to the Pacific Ocean. This plain, relieved only occasionally by low mountain ranges (notably the Urals), consists of three zones running east and west: (1) the frozen marshy tundra of the Arctic; (2) the more temperate forest belt; and (3) the steppes or prairies to the south, which in southern Soviet Asia become sandy deserts. The topography is more varied in the South, particularly in the Caucasus between the Caspian and Black Seas, and in the Tien-Pamir mountain system bordering Afghanistan, Sinkiang and Mongolia. Mountains (Stanovoi and Kolyma) and great rivers (Amur, Yenisei, Lena) also break up the sweep of the plain in Siberia.

Minerals. The U.S.S.R. is probably the richest country in the world in mineral resources, containing deposits of almost

every known mineral. It ranks among the top producing nations in coal, chromite, iron ore, petroleum, gold, copper, manganese and other products. The richest mineral region is that of the Ural Mountains, which lacks only good coking coal. Total coal and lignite production in 1956 was officially reported at 430,000,000 metric tons and was to be increased to 593,000,000 metric tons by 1960. Petroleum production in 1956 was reported at 83,800,000 metric tons (about 590,000,000 barrels) and was to be increased to 135,000,000 tons by 1960. Iron ore output in 1956 was 78,000,000 tons. Unofficial production estimates for other minerals and metals included aluminum (1956), 485,000 short tons; copper (1956), 417,000 short tons; gold (1955), 9,000,000 oz.; lead (1956), 290,000 short tons; nickel (1956), 50,000 short tons; silver (1955), 25,000,000 oz.; zinc (1956), 336,000 short tons. Uranium deposits are known to exist in the Soviet Union.

Forests. With a forested area of about 2,500,000,000 acres, the U.S.S.R. possesses a large proportion of the world's timber reserves. Most of the forested area is in Siberia, but there are also valuable stands in the Caucasus. Plans were made late in 1948 for the planting of huge forest belts 60 to 90 mi. wide in the southern steppes to protect fertile food-producing areas from the dry winds of the central Asian and Caspian deserts. Cut timber production in 1955 was estimated at 197,000,000 cu. m.

Fisheries and Furs. The rivers, lakes and surrounding seas (except the Black Sea) are rich in fish; the catch in 1955 was estimated at 2,498,000 metric tons. The acquisition of former Japanese fisheries in Karafuto and the Kuriles greatly increased output of the Far Eastern fish industry. Trapping is an important secondary industry, especially in eastern Siberia.

Climate. The climate necessarily is varied, but for the most part is continental. In general the climate of the northern and central regions is characterized by long, cold winters and by summers which are shorter and cooler than those in the northern part of the United States. Siberia has the coldest winters in the world; the January average at Verkhoyansk is -59° . In the southern regions the climate varies between temperate and subtropical. The Uzbek, Turkmen and Kazakh S.S.R.'s are largely desert and semi-desert areas. In the central belt rainfall is fairly uniform, averaging about 15 inches east of the Urals and 20 inches to the west. In the tundra to the north it drops to about 8 inches and to 4 inches in the southern regions.

Average daily low temperature at Moscow is about 5° (high, 14°) in January, the coldest month; average daily high is 71° during July, the warmest month.

Uruguay (Republic)

(República Oriental del Uruguay)

Area: 68,369 square miles.

Population (est. 1954): 2,800,924 (1950: white, 89.1%; others, 10.9%).

Density per square mile: 41.0.

President of Federal Council (1957-58): Arturo Lezama.

Principal cities (est. 1954): Montevideo, 810,969 (capital); Mercedes, 44,900 (farming center); Salto, 44,900 (cattle raising); Paysandú, 44,000 (meat packing).

Monetary unit: Peso.

Language: Spanish.

Religion: Roman Catholic.

HISTORY. Juan Diaz de Solís, a Spaniard, discovered Uruguay in 1516, but the Portuguese were first to settle it when they founded Colonia in 1680. After a long struggle, Spain wrested the country from Portugal in 1778. Uruguay revolted against Spain in 1811, only to be conquered in 1816-20 by the Portuguese from Brazil. Independence was reasserted with Argentine help in 1825, and the republic was set up in 1830. There followed a long period of factional strife between two groups still in existence at the present time—the Blancos and the Colorados.

GOVERNMENT AND DEFENSE. Under the 1934 Constitution, as amended in 1951, the executive power is exercised by a Federal Council of 9 members, 6 of the majority and 3 of the minority party, normally elected for 4-year terms. The presidency of the Council is rotated annually. There is a bicameral Congress composed of a 99-member Chamber of Deputies and a 31-member Senate elected for 4 years. All literate citizens of Uruguay may vote, including women, who may also sit in congress.

Service in the army is voluntary, but national guard service is compulsory in wartime. There is a police force of about 5,500, and a small air force. The navy has 2 frigates, 4 patrol vessels and several smaller craft.

SOCIAL AND ECONOMIC CONDITIONS. Uruguay's illiteracy rate is 35 per cent; primary education is compulsory, and all education is free. In 1953, there were 1,827 primary schools with 272,721 pupils and (1951) 115 secondary schools with 37,858 students. The university at Montevideo had 11,603 students in 1951. Uruguay's high percentage of white population includes many foreign-born, mostly Italian and Spanish.

Cattle, sheep, meat and wool dominate the Uruguayan economy. With nearly 80 per cent of its grassy land devoted to grazing, there were in 1956, 22,900,000 sheep and 7,305,000 cattle. Wool production in 1956 was 53,000 metric tons, clean. With only about 5 per cent of the land cultivated, a third of this grows wheat, the chief crop (1956-57: 750,000 metric

tons). Other crops are corn, flax for linseed, oats, potatoes, beans, fruits, tobacco, alfalfa and grapes. Wine production for 1956 was about 26,000,000 U. S. gallons.

Uruguay slaughters more than two million head of cattle and sheep a year, and meat processing is the largest manufacturing industry. There are many modern plants for chilling or freezing meat, and plants for liquid extract of beef.

During World War II Uruguay doubled its foreign trade, and most of the increase went to the U. S. Recent data are as follows (in millions of U. S. dollars):

	1954	1955	1956
Exports	248.9	183.1	211.1
Imports	274.4	225.0	205.8

In value, wool was the chief export (62%) in 1956, followed by wheat (14%), meat (9%) and hides (6%). Chief customers were the Netherlands (24%), the U. S. (12%) and Brazil (11%); leading suppliers, the U. S. (16%); Brazil (12%), and Western Germany (7%). Leading imports included machinery, vehicles, gasoline, textiles and sugar.

Railway mileage in 1954 totaled 1,928. Prior to 1948, 90 per cent was British-owned, but in that year the government purchased complete interest. Road mileage was 26,000 in 1955, of which 3,100 mi. were paved national roads. On June 30, 1956, the merchant marine had 42 vessels (100 tons and over) of 73,423 gross tons.

The 1957 budget provided for expenditure of 674,000,000 pesos. The funded public debt on July 31, 1956, was 1,212,000,000 pesos.

NATURAL FEATURES; CLIMATE. Uruguay, a low rolling plain in the south and a low plateau in the north, has a 120-mile Atlantic shore line, a 235-mile frontage on the Río de la Plata, and 270 miles on the Uruguay River, its western boundary. The climate is good. Average summer temperature in January and February is 71°, and average winter temperature in July is 50°. Frost is almost unknown. Average rainfall is 35 inches, heaviest in the autumn.

Vatican City State

(Stato Città Vaticana)

Area: 108.7 acres.

Population (est. 1952): 947 (Italian, 85%; Swiss and others, 15%).

Ruler: The Supreme Pontiff, Pius XII.

Monetary unit: Lira.

Languages: Latin, Italian.

Religion: Roman Catholic.

The Vatican City State, sovereign and independent, is situated on the Vatican hill on the right bank of the Tiber in northwest Rome. The area has been intimately associated with the history of the Roman Catholic Church since the time of

the martyrdom of St. Peter. From it the Pope exercised temporal sway for many centuries over a large part of central Italy; in 1859 the Papal States comprised an area of some 17,000 square miles. During the struggle for Italian unification, from 1860 to 1870, most of this area became part of Italy.

By an Italian law of May 13, 1871, the temporal power of the Pope was abrogated, and the territory of the Papacy was confined to the Vatican and Lateran palaces and the Villa of Castel Gandolfo. The Popes consistently refused to recognize this arrangement, and by the Lateran Treaty of Feb. 11, 1929, between the Vatican and the Kingdom of Italy, the exclusive dominion and sovereign jurisdiction of the Holy See over the city of the Vatican was again recognized, thus restoring the Pope's temporal authority over the area. Accompanying the treaty were conventions regulating the position of the Catholic Church in Italy and providing for reimbursement to the Vatican in final settlement of the claims of the Holy See against Italy for the loss of temporal power in 1870-71.

The Supreme Pontiff is Pius XII (Eugenio Pacelli), born at Rome, March 2, 1876, proclaimed cardinal in 1929, and elected Pope on March 2, 1939. He was crowned on March 12.

The Pope has full legal, executive and judicial powers. Executive power over the area is in the hands of a Governor appointed by the Pope and exclusively responsible to him.

The College of Cardinals is the Pope's chief advisory body, and upon his death the cardinals elect his successor for life. The cardinals themselves are created for life by the Pope. When complete, the College consists of 70 members.

The central administration of the Roman Catholic Church throughout the world is carried on in the Vatican by 12 congregations, 3 tribunals and 4 offices.

In its diplomatic relations with foreign countries, the Vatican is represented by the Papal Secretary of State. In 1956 the Vatican maintained diplomatic relations with 40 states through its papal-nuncios (ambassadors) and inter-nuncios (ministers). Apostolic Delegates, representatives without accredited rank, are maintained in a number of other countries throughout the world.

The Vatican has its own railway station, postal facilities, coinage, newspaper, radio and television system. In addition to the Vatican itself, which includes St. Peter's Square, extraterritorial rights are enjoyed in 13 buildings in the city of Rome outside Vatican City.

Venezuela (Republic)

(República de Venezuela)

Area: 352,143 square miles.

Population (est. Dec. 1955): 6,000,000* (mestizo, 65%; white, 20%; Negro, 8%; Indian, 7%).

Density per square mile: 17.0*

President: Marcos Pérez Jiménez.

Principal cities (est. Dec. 31, 1956): Caracas, 749,303 (capital); Maracaibo, 389,723 (oil); Barquisimeto, 164,908 (sugar, coffee, mining); Valencia, 124,376 (farming center).

Monetary unit: Bolívar.

Language: Spanish.

Religion: Roman Catholic.

* Excludes tribal Indians.

HISTORY. Venezuela, a third larger than Texas, has a stormy political past and the distinction of being the world's second greatest producer of oil, outranked only by the U. S. Simón Bolívar, who led the liberation of much of the continent from Spain, was born in Caracas.

Columbus discovered Venezuela on his third voyage in 1498. A subsequent Spanish explorer, for reasons of his own, gave the country its name, meaning "Little Venice." There were no important settlements until Caracas was founded in 1567. With Bolívar taking part, Venezuela was one of the first South American colonies to revolt against Spain in 1810, but it was not until 1821 that independence was won. Federated at first with Colombia and Ecuador, the country set up a republic in 1830, and then sank for many decades into a condition of revolt, dictatorship and corruption. From 1908 to 1935, General Juan Vicente Gómez ruled tyrannically over the nation, picking satellites to alternate with him in the presidential palace.

Dr. Rómulo Betancourt and his party, the liberal Acción Democrática, won 137 out of 160 seats in an election held Oct. 27, 1946, for a constituent assembly to draft a new Constitution. The well-known writer, Rómulo Gallegos, easily won the presidential election held in 1947, as the candidate of Acción Democrática.

On Nov. 24, 1948, the Venezuelan army ousted Gallegos and established a military junta which was reconstituted on Nov. 27, 1950. Following elections for a constituent assembly on Nov. 30, 1952, the junta presented its resignation to the army, which named Col. Marcos Pérez Jiménez as provisional President on Dec. 2, 1952.

GOVERNMENT AND DEFENSE. Venezuela comprises 20 states, a federal district and two territories. Under the 1953 Constitution (Venezuela's 21st) the Congress consists of a 42-member Senate elected by state legislatures and a 104-member Chamber of Deputies elected directly. The President is elected by popular vote for five years.

Military service is compulsory, with a one- to three-year initial training period. The army has about 10,000 men. The navy has 3 destroyers, 6 frigates. There is a small air force.

SOCIAL AND ECONOMIC CONDITIONS. Illiteracy in 1949 was estimated at 60 per cent. Primary education between ages of 7 and 14 is compulsory. In Dec. 1954, 7,014 primary schools reported 608,976 pupils enrolled; 197 secondary and special schools had 33,481. There are five universities—Los Andes at Mérida, Central University at Caracas, Zulia at Maracaibo, and two Catholic universities at Caracas.

Agriculture engages the majority of the population, but production has failed to keep pace with the food needs of the rapidly increasing population. The principal crop is coffee, grown on 60,000 plantations on the slopes of the coastal mountains. Production in 1956-57 was 800,000 bags of 132 lb. each. Exports of cacao in 1956 were 18,532 metric tons. Other important crops are sugar, tobacco, cotton, corn, wheat and tropical fruits. Stockraising, which is centered east of Lake Maracaibo, and on the llanos, is important.

There are few industries, the most important being woodworking, cotton textiles and tobacco products. Electric power is plentiful, and a law of 1943 prepared the way for the beginning of an oil refining industry. In 1956, 228,260,000 bbl. of crude petroleum were refined and 3,391,751,000 cigarettes and 1,451,171 metric tons of cement were produced. Venezuela's first steel plant is under construction near Puerto Ordaz.

Oil, most of which is found on the northwest shore of Lake Maracaibo, is by far the dominant factor in the economy. It accounts for 95 per cent of exports, gives the country a big foreign trade balance and a treasury surplus. Recent foreign trade statistics, in millions of bolívars:

	1954	1955	1956
Exports	5,661.0	6,408.7	7,114.2
Imports	2,745.8	2,959.6	3,438.4

In 1955 the U. S. supplied over 60% of the imports, which included for the most part machinery and equipment, metals and manufactures, foodstuffs, beverages and textiles. In addition to petroleum and products (93%), chief exports in 1956 were iron ore, coffee and cacao. Most of the crude oil goes to the U. S. via the islands of Curaçao and Aruba, refining centers in the West Indies.

In 1953 there were 10,243 mi. of all-weather roads. Public railways (1955) totaled about 544 mi., divided among a number of disconnected lines of varying gauges.

The 1957-58 budget was balanced initially at 2,800,000,000 bolívars. There is no foreign debt.

NATURAL FEATURES AND RESOURCES; CLIMATE. An unusual setting of mountain systems breaks Venezuela into four distinct areas: (1) the Maracaibo lowlands; (2) the mountainous region in the north and northwest; (3) the Orinoco basin with the llanos (vast grass-covered plains) on its northern border and great forest areas in the south and southeast; (4) the Guayana highland, south of the Orinoco, accounting for nearly half the national territory. About 80 per cent of Venezuela is drained by the Orinoco and its 400 tributaries.

Oil production increased from 116,000,000 barrels in 1931 to 889,180,000 barrels in 1956 (1955: 787,382,000 barrels). In addition to oil, Venezuela has gold mines in the region southwest of the Orinoco delta. Output in 1956 was 69,800 troy oz. Of lesser importance are manganese, bauxite, coal, copper, tin, asbestos and asphalt. Diamond production in 1956 was 93,833 carats. A subsidiary of Bethlehem Steel Corp. began the mining of iron ore in the El Pao area south of the Orinoco river in 1950, while a U. S. Steel Corp. subsidiary is exploiting a rich "iron mountain" south of Ciudad Bolívar on the Orinoco. Production of iron ore in 1956 totaled 11,014,784 metric tons (1955: 8,439,451 tons); average metal content is 65%.

The climate is tropical and unhealthy except where modified by altitude; it approaches the mild temperate in the higher western mountains. Most rainfall occurs between April and October, and the rest of the year is dry. At La Guaira, the mean annual temperature is 81°, at Caracas, 70°, at Cumaná, 83°.

Vietnam

Vietnam ("Land of the South") was divided at the Geneva conference in July 1954 along the 17th parallel, the northern part going to the Communist-dominated Vietminh. Elections for a unified government were to be held within 2 years. There appeared to be little likelihood in the following years that such elections actually would be held.

After World War II, the Republic of Vietnam—at that time comprising Tongking and northern Annam—was recognized by the French as a free state within the Indo-Chinese Federation and the French Union. The French refusal to accede to demands of Vietnam leaders headed by Dr. Ho Chi-minh, a Communist, for the accession of Cochín-China to the new state and the continued landing of French troops led to the outbreak of hostilities with Ho Chi-minh's Vietminh in Dec. 1946.

Amid the hostilities, protracted negotiations ensued regarding the future legal status of Indo-China. France installed

Bao Dai, former Emperor of Annam, as head of a new French-supported state of Vietnam (to which Cochín-China acceded in 1949) and under agreements concluded with Vietnam and subsequently with Laos and Cambodia, all of which were finally ratified in 1950, the three states were recognized with some reservations as independent associated states within the French Union.

Meanwhile, the Vietminh forces, organized as the Democratic Republic of Vietnam and recognized by the U.S.S.R., Communist China and other states of the Soviet bloc, acquired a hold on most of Vietnam outside the large urban centers and heavily settled delta areas which, with the aid of Communist Chinese logistical support, they held and even extended despite persistent pressure by French and associated troops.

Republic of Vietnam

Area: 65,726 square miles.

Population (est. 1956): 12,366,000.

Density per square mile: 188.1.

President: Ngo Dinh Diem.

Principal cities (est. 1956): Saigon-Cholon, 1,794,360 (capital, chief port); Tourane, 100,978 (port, naval base); Hue, 90,682 (rice, sawmills).

Monetary unit: Piastre.*

Languages: Annamese, French.

Religions: Buddhist, Christian.

* 1 piastre = 10 French metropolitan francs.

The young republic of Vietnam comprises the southern part of the former state of Viêt-Nam and includes all of the former state of Cochín-China and the southern part of Annam. It is a member of the French Union, but its new status has not been fully defined.

Considerable discord and unrest prevailed after the partition. In a referendum held on Oct. 23, 1955, the people voted overwhelmingly for Ngo Dinh Diem as Chief of State. Diem proclaimed a republic on Oct. 26 and became its first President. His supporters won most of the seats in the first National Assembly elections held on March 5, 1956.

About 90% of the people derive their livelihood from agriculture, most of them being employed in growing rice and rubber. The Mékong delta is one of the leading rice-exporting areas in the world. Production in 1956 included rice, 3,514,620 metric tons; rubber, 70,235 tons. Other crops are tea, coffee, maize, tobacco, kapok and pepper. Water buffalo are used chiefly for draft purposes.

Factories, centered in Saigon-Cholon, are small and process goods for local consumption and agricultural and forest products for export. Most important are the rice and sawmills.

In 1956 exports totaled 1,358,836,000 piastres; imports, 7,617,758,000 piastres. The chief export was rubber (86%). Leading customers were France (67%), the U. S. (19%) and Cambodia (4%); leading suppliers, the U. S. (28%), Japan (26%) and France (23%).

Rivers and canals are an important means of transport. A railway runs up the coast from Saigon, and there is a good network of highways.

The area consists essentially of the vast Mékong river delta and to the north, part of the Annamese cordillera and the adjoining coastal plain.

Forests are mostly of secondary growth and of limited commercial value, except for mangrove stands in the extreme south. Mineral resources are limited. Coal is most important; some deposits of phosphates and gold exist.

The climate is monsoonal, with nearly all the very heavy rainfall between May and October.

Democratic Republic of Vietnam

Area: 63,360 square miles.

Population (est. 1955): 12,500,000.

Density per square mile: 197.3.

President: Ho Chi-minh.

Premier: Pham Van-dong.

Principal cities (est. 1953): Hanoi, 297,900 (capital); Haiphong, 188,600 (chief port).

Monetary unit: Dong.

Languages: Annamese, Chinese, French.

Religions: Buddhist, Christian.

The republic of Vietnam comprises the northern part of the former state of Viêt-Nam and includes all of the former state of Tongking and the northern part of Annam. It is no longer a part of the French Union. The government of the republic is organized along typical Communist lines.

The economy is based on agriculture and mining. The chief crop is rice, grown chiefly in the Red River delta and supplying in most years the requirements of the population. Other crops are maize, arrowroot, sugar cane, tea, coffee, tobacco and sweet potatoes. Industry is not highly developed. There are important coal mines in the Quangyen basin near Haiphong. Tin, limestone and gold also are produced. A railway runs south from Hanoi along the coast and in the north connects through Langson with the railway network of Communist China.

The area consists principally of the Red River delta in the north and the northern coastal plain of Annam. The climate is similar to that of south Vietnam, although the winters are cooler and the precipitation greater.

Yemen (Kingdom)

Area: c. 75,290 square miles.
 Population (est. 1953): 4,500,000.
 Density per square mile: c. 59.8.
 King: Ahmad ibn Yahya Hamid ed-Din.
 Premier: Seif ul-Islam el-Badr.
 Principal cities (est.): Sana, 50,000 (capital); Hodeida, 30,000 (chief port); Taiz, 12,000 (seat of government).
 Monetary unit: Riyal.
 Language: Arabic.
 Religion: Moslem.

The history of Yemen, in the southwest Arabian peninsula fronting the Red Sea, dates back to the Minaean kingdom (1,200-650 B.C.). It accepted Islam in 628 A.D. and in the 10th century came under the control of the Rassite dynasty of the Zaidi sect, which still rules. The Turks occupied the area from 1538 to 1630 and from 1849 to 1918. Its sovereign status was confirmed by treaties signed with Saudi Arabia and Britain in 1934. Yemen was admitted to United Nations membership in 1947.

Yemen is an absolute monarchy. The present ruler came to the throne in 1948, after insurgents murdered his father. Nearly all the population of the country is settled and nomadism prevails only in the lowlands.

Unlike most of Arabia, the Yemeni highlands are well adapted to agriculture; they produce grain, fruit, vegetables and Mocha coffee. Stock raising flourishes, particularly in the lowlands. Exports include coffee and hides.

The narrow coastal plain rises sharply to a maritime range and central plateau (highest point, 12,336 ft.). Winter temperatures in the highlands fall below 40° F. and summers are cool.

Yugoslavia (Republic)

(Federaciona Narodna Republika)

Jugoslaviija)

Area: 98,700 square miles.
 Population (est. 1956): 17,799,000 (1953: Serbian, 41.7%; Croat, 23.5%; Slovene, 8.8%; Macedonian, 5.3%; Albanian, 4.4%; others, 16.3%).

Density per square mile: 180.3.

President: Josip Broz (Tito).

Principal cities (census 1953): Belgrade (Beograd), 469,988 (capital); Zagreb, 350,452 (Croat commercial center); Ljubljana, 138,211 (Slovenian industrial center); Sarajevo, 135,657 (Bosnian manufacturing center); Skopje, 121,551 (capital, Macedonia); Subotica, 115,402 (wheat).

Monetary unit: Dinar.

Languages: Serbo-Croat, Slovene, Macedonian (all official).

Religions (est. 1952): Greek Orthodox, 49.6%; Roman Catholic, 36.8%; Moslem, 12.5%; others, 1.1%.

HISTORY. Yugoslavia, twice the size of Pennsylvania and fronting on the Adriatic

Sea opposite Italy, was formed in 1919 out of some of Europe's oldest trouble spots in the Balkans. After a brief and unstable history of 25 years, it emerged from World War II as a Russian satellite. World amazement, however, followed an attack made June 28, 1948, by the Soviet-dominated Cominform on Marshal Tito and the Yugoslav Communist party for inspiring a "hateful" policy against the Soviet Union and retreating from the Communist line in foreign and domestic policies. Unlike other officials similarly attacked by Soviet organs in the past, Tito denounced the Cominform's action and still continued in full power despite further repeated attacks on him by the Cominform and members of the Soviet east European bloc. On September 29, 1949, the Soviet Union denounced its 1945 treaty of friendship with Yugoslavia. On June 20, 1956, however, following a visit by Tito to Moscow, the U.S.S.R. and Yugoslavia signed a pact of renewed friendship.

The 1919 components of Yugoslavia were the old kingdoms of Serbia and Montenegro, and the following: Bosnia-Herzegovina, formerly administered jointly by Austria and Hungary; Croatia-Slavonia, which had had limited autonomy under Hungary; and Slovenia and Dalmatia, formerly administered by Austria.

Alexander I, son of King Peter of Serbia, became the first King of the new country on Aug. 16, 1921. His reign was a rocky one because the Croats, under Dr. Stephen Radić, unceasingly sought autonomy. Finally, a Croat assassinated Alexander in Marseilles, France, in 1934, and since his son Peter was a minor, a regency was set up under Prince Paul, the new King's uncle.

After pursuing an increasingly pro-Axis policy under the regent, Yugoslavia signed the Axis Pact on March 25, 1941; this caused the overthrow of the government two days later. On April 6 the country was invaded by the Nazis and was speedily occupied. While the King and government fled to the Near East and later to London, Yugoslavia was divided into German, Italian, Hungarian and Bulgarian occupation zones. Puppet regimes were established in Croatia and Serbia.

Inside Yugoslavia, the Axis occupation was fought by two guerrilla armies—the Chetniks under Draja Mihailović, who supported the monarchy; and the Partisans under Marshal Tito (Josip Broz), who leaned toward Russia. These two groups fought not only the Germans, but also each other. In November 1943, Tito established an Executive National Committee of Liberation to act as a provisional government, thus repudiating King Peter, who was in exile.

In the elections of Nov. 11, 1945, Tito's forces won overwhelmingly, partly because

the monarchist factions boycotted the balloting. Convening on Nov. 29, the new Assembly abolished the monarchy and set up the Federal People's Republic of Yugoslavia. Tito was Prime Minister, and his government won recognition from Britain and the United States.

The Tito government embarked upon an internal policy of ruthless oppression and elimination of opposition factions, including the summary trial and execution of Mikhailovic in 1946. In April 1947, it initiated a five-year plan for agriculture and industry.

Externally the government pursued, until 1948, its uncompromising support of Moscow, as manifested by Yugoslav aid to antigovernment Greek guerrillas, which had led to a U. N. inquiry in 1947. Soviet support enabled the nation to secure most of Italian Istria under the 1947 peace treaty, but efforts to secure sovereignty over the key port of Trieste were unsuccessful. Zone B of the former free territory of Trieste was, however, transferred to Yugoslavia in Oct. 1954.

Tito was elected President of Yugoslavia under the new Constitution on Jan. 14, 1953. In 1957 he adopted a policy of renewed collaboration with the U.S.S.R. and the Communist bloc.

GOVERNMENT AND DEFENSE. Under the 1953 Constitution, Yugoslavia is a federal republic composed of six units—Serbia (which includes the autonomous province of Vojvodina and the autonomous region of Kosovo-Metohija), Croatia, Slovenia, Bosnia-Herzegovina, Macedonia and Montenegro. Executive power is vested in the Federal Executive Council of 30 to 45 members elected by and from the Federal Assembly, and presided over by the President of the republic, who is elected by and is responsible to the Federal Assembly. The Assembly consists of (1) a Federal Council of 352 members, most of whom are popularly elected and (2) a Council of Producers, elected by organized producing citizens in agriculture, industry and the crafts. Actual administration is carried on by 5 State Secretaries responsible to the Executive Council. Actual control of the country remains with the Yugoslav Communist party.

The army, based upon the National Liberation Army and partisan detachments which at one time had a strength of about 800,000, had only a fraction of that strength in 1957. Equipment generally is poor. The navy was believed to include 2 submarines and 4 escort vessels in Dec. 1956.

SOCIAL AND ECONOMIC CONDITIONS. Education on the elementary level is compulsory and free. Illiteracy (10 years and over) was 25% in 1953. In 1953-54 there were 14,044 elementary schools with 1,402,-

000 pupils, 2,106 secondary schools with 523,000 pupils and 1,074 technical schools with 140,000 students. The various universities and technical colleges had a total enrollment of 59,571 in 1953-54.

Agriculture occupies about 80 per cent of the population. The principal crops are corn, wheat, sugar beets, hemp, hops, opium (in Macedonia) and tobacco (chiefly in Macedonia and Herzegovina). Excellent wines are produced in Dalmatia and Herzegovina and along the Danube. Recent crop production data are as follows, in thousands of metric tons:

	1954	1955*	1956*
Wheat	1,385	2,436	1,606
Maize	3,004	3,900	3,370
Sugar beets	1,249	1,380	1,200
Potatoes	1,876	2,260	2,190
Tobacco	29	42	...

* Provisional.

In 1956 there were 5,220,000 cattle, 11,518,000 sheep and 4,699,000 hogs. Wool production in 1956 was 10,000 metric tons, clean basis.

Manufactures are limited for the most part to consumers' goods. Legislation passed Dec. 5, 1946, nationalized all private economic enterprises, public works and industries in 42 branches of the national economy including mining, metallurgy, and all industries which process natural products. In 1956, 644,400 metric tons of pig iron and 886,800 tons of steel were produced.

Yugoslavia has only limited access to ports on the Adriatic because of the difficulty in crossing the coastal range with railways and highways. Waterways, especially the Danube, are important. The merchant marine in 1956 totaled 169 vessels (of over 100 tons) with a gross tonnage of 319,447. Railway mileage in 1954 was 7,200 and highway mileage 51,000.

Recent trade data are as follows (in billions of dinars):

	1954	1955	1956
Exports	72.11	76.98	97.0
Imports*	101.82	132.29	142.2

* Including imports in aid.

Leading customers in 1956 were western Germany (15%), Italy (14%) and the U.S.S.R. (13%); leading suppliers, the U. S. (27%), the U.S.S.R. (15%) and western Germany (10%). Chief exports in 1955 were sawn timber (13%), tobacco (6%) and pulpwood (3%).

The 1956 budget balanced revenue and expenditure at 212,500,000,000 dinars.

NATURAL FEATURES AND RESOURCES; CLIMATE. About half of Yugoslavia is mountainous. In the north, the Dinaric Alps rise abruptly from the sea and progress eastward as a barren limestone plateau called the Karst. Montenegro is a

jumbled mass of mountains, containing also some grassy slopes and fertile river valleys. Southern Serbia, too, is mountainous. A rich plain in the north and northeast, drained by the Danube, is the most fertile area of the country. The Danube and tributaries—the Drava, Sava and Morava—in the northeast are the principal rivers.

Yugoslavia is the Balkans' principal mineral producer. Production in 1956 was as follows, in metric tons: coal, 1,232,400; lignite, 15,864,000; iron ore (metal con-

tent 45%), 1,724,400; (1955) blister copper, 28,200; chromite, 126,200; bauxite, 791,000; manganese, 10,900; refined lead, 75,600; raw zinc, 13,700; silver, 291,000 oz. Uranium deposits have been reported.

On the Adriatic, Yugoslavia's climate is mild and Mediterranean, but in the interior the winters are cold and the summers hot. January temperatures in Belgrade average about 30°, and summer temperatures are usually in the 70's. Rainfall is heaviest throughout the country from October to January.

A record of later events may be found in the section: NEWS RECORD of 1957.

Principal Deserts of the World

Desert	Location	Approximate size	Appx. elevation, ft.
Atacama.....	North Chile.....	400 mi. long.....	7,000-13,500
Black Rock.....	Northwest Nevada.....	70 mi. long and in places 20 mi. wide, or about 1,000 sq. mi.	2,000-5,000
Colorado.....	Southeast California from San Geronio Pass to Gulf of California	200 mi. long and a maximum width of 50 mi.....	Few feet above to about 250 below sea level
Dasht-i-Kavir.....	Southeast of Caspian Sea in Iran...	.....	2,800
Dasht-i-Lut.....	Northeast of Kerman in Iran.....	.....	1,000
Gobi (Shamo or "Desert of Sand")	Covers most of Mongolia.....	800 by 400 mi., or at least 300,000 sq. mi.	3,000-5,000
Great Arabian.....	Most of Arabia.....	1,500 mi. long.....	.....
Syrian (El Hamad)	North of 30° N. Latitude.....	.....	1,850
Nefud (Red Desert)	South of Jauf.....	400 mi. long and average of 200 mi. wide.....	3,000
Dahna.....	Southeast of Nefud.....	400 by 30 mi.....	.....
Rub' al Khali.....	South portion of Nejd.....	.....	.....
Great Australian.....	Western portion of Australia..... (Includes: Great Sandy; Gibson; Great Victoria; Arunta.)	About one-half the continent	600-1,000
Great Salt Lake.....	West of Great Salt Lake to Nevada-Utah line.	80 by 50 mi.....	4,500
Kalahari.....	South Africa between the Orange and Zambesi Rivers	400 by 600 mi., or about 120,000 sq. mi.....	Over 3,000
Kara Kum (Desert of Khiva or "Black Sands")	Southwest Turkestan south of Lake Aral	110,000 sq. mi.....	.....
Kizil Kum.....	Central Turkestan southeast of Lake Aral	370 by 220 mi., or about 70,000 sq. mi.....	160 near Lake Aral to 2,000 in southeast
Mohave.....	North of Colorado Desert and south of Death Valley in southeast California	15,000 sq. mi.....	2,000
Painted Desert.....	Northeast Arizona.....	75 mi. wide.....	High plateau 5,000
Sahara.....	Northern states of Africa to about 15° N. Lat. and from Red Sea to the Atlantic Ocean	3,200 mi. greatest length along 20° N. Lat.; width varies from 800 to 1,400 mi. Area over 3,500,000 sq. mi.	440 below sea level to 11,000 above with an average elevation of 1,400-1,600
Libyan.....	East portion of the Sahara west of Nile	More than 500,000 sq. mi.....	.....
Nubian.....	From Red Sea to great west bend of the Nile	.....	2,500
Takla Makan.....	S. Central Sinkiang in Tarim Basin	700 mi. long.....	.....
Thar (Indian).....	Chiefly Rajputana, India.....	About 300 mi. by 380 mi.....	About 500

Explorations and Discoveries

Africa

Country or place	Event	Explorer or discoverer	Date
Sierra Leone	Visited	Hanno, Carthaginian seaman	c. 520 B.C.
Congo River	Mouth discovered	Cão, Portuguese navigator	c. A.D. 1484
Cape of Good Hope	Doubled	Bartholomeu Diaz, Portuguese navigator	1488
Gambia River	Explored	Mungo Park, Scottish explorer	1795
Sahara Desert	Crossed	Denham and Clapperton, English explorers	1822-23
Zambezi River	Discovered	Livingstone, Scottish explorer	1851
Sudan	Explored	Barth, German explorer	1852-55
Victoria Falls	Discovered	Livingstone	1855
Lake Tanganyika	Discovered	Burton and Speke, British explorers	1858
Congo River	Traced	Stanley, British explorer	1877

Asia

Punjab (India)	Visited	Alexander the Great	327 B.C.
China	Visited	Marco Polo, Italian traveler	c. A.D. 1272
Tibet	Visited	Odoric, Italian monk	c. 1325
Southern China	Explored	Conti, Italian adventurer	c. 1440
India	Visited by Cape route	Vasco da Gama, Portuguese navigator	1498
Japan	Visited	St. Francis Xavier of Spain	1549
Arabia	Explored	Niebuhr, German explorer	1762
China	Explored	Richthofen, German scientist	1868
Mongolia	Explored	Przhevalsky, Russian explorer	1870-73
Central Asia	Explored	Hedin, Swedish scientist	1890-1908

Europe

Shetland Islands	Visited	Pytheas of Massilia (Marseille)	c. 325 B.C.
North Cape	Rounded	Ottar, Norwegian explorer	c. A.D. 870
Iceland	Colonized	Norwegian noblemen	c. 890-900

North America

Greenland	Colonized	Eric the Red, Norwegian navigator	c. A.D. 985
Labrador; Nova Scotia (?)	Discovered	Leif Ericsson, Norse explorer	1000
West Indies	Discovered	Christopher Columbus, Italian navigator	1492
North America	Coast discovered	John Cabot, for British	1497
Pacific Ocean	Discovered	Balboa, Spanish explorer	1513
Florida	Explored	Ponce de León, Spanish explorer	1513
Mexico	Conquered	Cortez, Spanish adventurer	1519
St. Lawrence River	Discovered	Cartier, French navigator	1534
Southwest U. S.	Explored	Coronado, Spanish explorer	1540-42
Colorado River	Discovered	Alarcón, Spanish explorer	1540
Mississippi River	Discovered	Hernando de Soto, Spanish explorer	1541
Frobisher Bay	Discovered	Frobisher, English seaman	1576
Maine Coast	Explored	Champlain, French explorer	1604
Jamestown, Va.	Settled	Smith, English colonist	1607
Hudson River	Explored	Hudson, English navigator	1609
Hudson Bay (Canada)	Discovered	Hudson	1610
Baffin Bay	Discovered	Baffin, English navigator	1616
Lake Michigan	Navigated	Nicolet, French explorer	1634
Arkansas River	Discovered	Marquette and Joliet, French explorers	1673
Mississippi River	Explored	LaSalle, French explorer	1682
Bering Strait	Discovered	Bering, Danish explorer	1728
Alaskan Coast	Sighted	Gvosdeff, Russian sailor	1731
Mackenzie River (Canada)	Discovered	Mackenzie, Scottish-Canadian explorer	1789
Northwest U. S.	Explored	Lewis and Clark	1804-06
Northeast Passage (Arctic Ocean)	Navigated	Nordenskiöld, Swedish explorer	1879
Greenland	Explored	Peary, American explorer	1892
Northwest Passage	Navigated	Amundsen, Norwegian explorer	1906

South America

Country or place	Event	Explorer or discoverer	Date
Continent	Visited	Columbus, Italian navigator	1498
Brazil	Discovered	Cabral, Portuguese explorer	1500
Peru	Conquered	Pizarro, Spanish explorer	1532-33
Amazon River	Explored	Orellana, Spanish explorer	1541
Cape Horn	Discovered	Schouten, Dutch navigator	1615

Oceania

New Guinea	Visited	Menezes, Portuguese explorer	1526
Australia	Visited	Jansz, Dutch explorer	1606
Tasmania	Visited	Tasman, Dutch navigator	1642
Australia	Explored	Sturt, English explorer	1828
Australia	Explored	Burke and Wills, Australian explorers	1861

Arctic, Antarctic and Miscellaneous

Ocean exploration	Expedition	Magellan's ships circumnavigated the globe	1519-22
Spitsbergen	Visited	Barents, Dutch navigator	1596
(Arctic Europe)			
Antarctic Circle	Crossed	Cook, English navigator	1773
Antarctica	Discovered	Palmer, U S. explorer (archipelago) and Bellingshausen, Russian navigator (mainland)	1820-21
Antarctica	Explored	Wilkes, American explorer	1840
North Pole	Discovered	Pearry, American explorer	1909
South Pole	Discovered	Amundsen, Norwegian explorer	1911

The Seven Wonders of the World

THE PYRAMIDS OF EGYPT

A group of three pyramids, *Khufu*, *Khafra* and *Menkaura* at Giza, outside modern Cairo, is often called the first wonder of the world; it is also the oldest and only surviving "wonder." The largest pyramid, built by Khufu (Cheops), had an original estimated height of 482 ft. (now approximately 450 ft.). The exact date of its construction is unknown and has been estimated as early as 4700 B.C. but is probably closer to 2900 B.C.

HANGING GARDENS OF BABYLON

Often listed as the second wonder, these gardens were supposedly built by Nebuchadnezzar about 600 B.C. to please his queen, Amuhia. They are also associated with the mythical Assyrian Queen, Semiramis. Archeologists surmise that the gardens were laid out atop a vaulted building, with provisions for raising water. The terraces were said to rise from 75 to 300 ft.

The Walls of Babylon, also built by Nebuchadnezzar, are sometimes referred to as the second (or the seventh) wonder instead of the Hanging Gardens.

STATUE OF ZEUS (JUPITER)
AT OLYMPIA

The work of Phidias (5th century B.C.), this colossal figure in gold and ivory was reputedly 40 ft. high. All trace of it is lost, except for reproductions on coins.

TEMPLE OF ARTEMIS (DIANA)
AT EPHEBUS

A beautiful structure, begun about 350 B.C. in honor of a non-Hellenic goddess who later became identified with the Greek goddess of the same name. The temple, with Ionic columns 60 feet high, was destroyed by invading Goths A.D. 262.

MAUSOLEUM AT HALICARNASSUS

This famous monument was erected by Queen Artemisia in memory of her husband, King Mausolus of Caria in Asia Minor, who died in 353 B.C. Some remains of the structure are in the British Museum. This shrine is the source of the modern word "mausoleum."

COLOSSUS AT RHODES

This bronze statue of Helios (Apollo), about 105 ft. high, was the work of the sculptor Chares, who reputedly labored for 12 years before completing it in 280 B.C. It was destroyed during an earthquake in 224 B.C.

PHAROS OF ALEXANDRIA

The seventh wonder was the Pharos (lighthouse) of Alexandria, built by Sostatus of Cnidus during the 3rd century B.C. on the island of Pharos off the coast of Egypt. It was destroyed by an earthquake in the 13th century.

Population, Land Areas of the World and World Elevations

Area	Estimated population, In thousands, 1956	Approximate area, in thousands of sq. mi.	Per cent of total land area	Population density per sq. mi.	Highest	Elevation, feet	Lowest	Dimensions, miles/ East-West North-South
WORLD	2,684,660	58,333	100.0	46.0	Mt. Everest, 29,028	Dead Sea, Asia, below sea level	1,290	24,902 24,860
ASIA , excluding Asiatic U.S.S.R.; including Philippines and Indonesia	1,474,638	10,599	18.1	139.1	Mt. Everest, Nepal, 29,028	Dead Sea, Palestine-Jordan, below sea level	1,290	5,400* 5,300*
AFRICA	217,909	11,684	20.0	18.7	Mt. Kilimanjaro, Tanganyika, 19,365	Qattara Depression, Egypt, below sea level	440	4,600 5,000
NORTH AMERICA	240,826	9,355	16.0	25.7	Mt. McKinley, Alaska, 20,300	Death Valley, Calif., 275 below sea level		3,200 4,000
SOUTH AMERICA	126,357	6,889	11.8	18.3	Mt. Aconcagua, Argentina, 22,835	Sea level		3,200 4,600
ANTARCTICA	Uninhabited	6,000	10.3	....	Mt. Thorvald, Nilsen, 15,400	Sea level		3,300† 2,400†
EUROPE , including Iceland; excluding European U.S.S.R.	409,295	1,903	3.3	215.1	Mt. Blanc, France, 15,781	Sea level		2,400 1,900
AUSTRALIA	8,987	2,974	5.1	3.0	Mt. Kosciusko, 7,328	Lake Eyre, 38 below sea level		
OCEANIA , incl. New Zealand and British, U. S., French and Australian territories, possessions, etc.	6,443	330	.6	19.5	Mauna Kea, Hawaii, 13,784	Sea level		
U.S.S.R.	200,200	8,599	14.8	23.3	Mt. Pobedy, 24,409	Caspian Sea, 86 below sea level		5,000 2,500

* Including Asiatic U.S.S.R. † Including European U.S.S.R.

HIGH POPULATION DENSITIES (per square mile)

	Japan	Germany (East)	Korea	
Monaco	34,613.6	630.4	398.7	335.4
Netherlands	877.8	547.1	368.4	318.3
Maldiv Islands	773.9	534.2	361.1	312.9
Belgium	759.9	415.5	352.5	311.7
				Haiti

Representative Mountain Peaks of the World

Mountain peak	Range	Location	Height, feet
Everest	Himalayas	Tibet-Nepal	29,028
Godwin Austen (K2)	Karakoram	India	28,250
Kanchenjunga	Himalayas	Nepal	28,140
Makalu	Himalayas	Tibet-Nepal	27,790
Dhaulagari	Himalayas	Nepal	26,795
Gurla Mandhata	Himalayas	Tibet	25,355
Tirich Mir	Hindu Kush	Pakistan	25,230
Muztagh Ata (K5)	Pamirs	Sinkiang	24,388
Muztagh	Kunlun	Sinkiang	23,890
Aconcagua	Andes	Argentina	22,835
Dos Conos	Andes	Argentina	22,507
Ojos del Salado	Andes	Argentina-Chile	22,408
Huascarán	Andes	Peru	22,205
Llullaillaco	Andes	Argentina-Chile	22,148
Kailas	Himalayas	Tibet	22,028
Mercedario	Andes	Argentina	21,883
Tupungato	Andes	Argentina-Chile	21,489
Sajama	Andes	Bolivia	21,391
Chimborazo	Andes	Ecuador	20,557
McKinley	Alaska	Alaska	20,300
Logan	St. Elias	Canada (Yukon Territory)	19,850
Kilimanjaro	.....	Tanganyika	19,565
Cotopaxi	Andes	Ecuador	19,344
Cayambe	Andes	Ecuador	19,170
Misti	Andes	Peru	19,167
Orizaba (Citlaltepētl)	Sierra Madre Oriental	Mexico	18,696
Elbrus	Caucasus	U.S.S.R.	18,468
St. Elias	St. Elias	Alaska-Canada	18,008
Vilcanota	Andes	Peru	17,998
Popocatepetl	Cordillera de Anáhuac	Mexico	17,883
Cerro de Cuz	Andes	Bolivia	17,828
Ixtaccihuatl	Cordillera de Anáhuac	Mexico	17,338
Tolima	Andes	Colombia	17,109
Dikh-Tau	Caucasus	U.S.S.R.	17,054
Kenya	.....	Kenya	17,040
Ruvenzori	Ruvenzori	Belgian Congo-Uganda	16,795
Kazbek	Caucasus	U.S.S.R.	16,545
Bona	Wrangell	Alaska	16,420
Klyuchevskaya	Kamchatka	U.S.S.R.	15,912
Savalan	Elburz	Iran	15,784
Blanc	Alps	France	15,781
Lister	.....	Antarctica	15,384
Fairweather	St. Elias	Alaska	15,287
Dashan	Simen	Ethiopia	15,158
Markham	.....	Antarctica	15,102
Matterhorn	Alps	Switzerland-Italy	14,780
Whitney	Sierra Nevada	California	14,495
Elbert	Rockies	Colorado	14,431
Massive	Rockies	Colorado	14,418
Rainier	Cascades	Washington	14,408
Longs	Rockies	Colorado	14,255
Colima	Sierra Madre Occidental	Mexico	14,239
Shasta	Sierra Nevada	California	14,161
Pikes Peak	Rockies	Colorado	14,110
Finsteraarhorn	Alps	Switzerland	14,026
Gannett Peak	Rockies	Wyoming	13,785
Mauna Loa	.....	Hawaii	13,680
Jungfrau	Alps	Switzerland	13,667
Cameroon	.....	British Cameroons	13,353
Erebus	.....	Antarctica	13,202
Robson	Rockies	British Columbia	12,972
Fujiyama (Fujisan)	.....	Japan	12,385
Cook	Southern Alps	South Island, New Zealand	12,349
Hood	Cascades	Oregon	11,245

Large Islands of the World

Island and status	Location	Area, sq. mi.
GREENLAND (Danish territory)	North Atlantic	839,782
NEW GUINEA (Under Dutch crown, west part; U. N. trust territory under Australian administration, northeast part; Australian territory, southeast part)	Southwest Pacific	312,329
BORNEO (United States of Indonesia, south part; British protectorate and colonies, north part)	South China Sea	290,012
MADAGASCAR (French overseas territory)	Off southeast coast of Africa	227,737
BAFFIN (Canada, Northwest Territories)	Arctic	201,600
SUMATRA (United States of Indonesia)	Northeast Indian Ocean	163,145
HONSHU (Japanese home island)	Sea of Japan—Pacific	91,278
GREAT BRITAIN (Eng., Scotland, Wales)	Off coast of northwest Europe	88,140
VICTORIA (Canada, Northwest Territories)	Arctic	80,450
ELLESMERE (Canada, Northwest Territories)	Arctic Ocean	75,024
CELEBES (United States of Indonesia)	Southwest Pacific	69,255
SOUTH ISLAND, NEW ZEALAND	South Pacific	58,093
JAVA (United States of Indonesia)	Northeast Indian Ocean	48,504
NORTH ISLAND, NEW ZEALAND	South Pacific	44,281
NEWFOUNDLAND (Canadian province)	North Atlantic	42,734
CUBA (Republic)	Caribbean Sea	42,350
LUZON	Philippine Islands	40,814
ICELAND (Republic)	North Atlantic	39,688
MINDANAO	Philippine Islands	36,537
HOKKAIDO (Japanese home island)	Sea of Japan—Pacific	34,084
IRELAND (Ireland, republic, south part; Northern Ireland, part of United Kingdom)	West of Great Britain	31,840
HISPANIOLA (Dominican Republic, east part; Haitian republic, west part)	Caribbean Sea	30,075
TASMANIA (Australian state)	South of Australia	26,215
BANKS (Canada, Northwest Territories)	Arctic	25,992
CEYLON (Member of Commonwealth of Nations)	Indian Ocean	25,332
SAKHALIN (U.S.S.R.)	North of Japan	24,560
DEVON (Canada, Northwest Territories)	Arctic	20,484
TIERRA DEL FUEGO (East part to Argentina; west part to Chile)	Southern tip of South America	18,530
MELVILLE (Canada, Northwest Territories)	Arctic	16,164
SOUTHAMPTON (Canada, N. W. Territories)	Hudson Bay	16,114

Oceans and Seas

Name	Area, sq. mi.	Average depth, feet	Greatest known depth, ft.	Place of greatest known depth
Pacific Ocean	63,801,700	14,048	35,400	Off Mindanao
Atlantic Ocean	31,830,800	12,880	30,246	Off Puerto Rico
Indian Ocean	28,356,300	13,002	22,968	Off Sumatra-Java
Arctic Ocean	5,440,200	3,953	17,850	77° 45' N.; 175° W.
Mediterranean Sea*	1,145,100	4,688	15,564	Off Cape Matapan, Greece
Caribbean Sea	1,049,500	8,685	22,788	Off Cayman Islands
South China Sea	895,400	5,419	18,090	West of Luzon
Bering Sea	875,800	4,714	13,422	Off Buldir Island
Gulf of Mexico	618,200	4,874	12,744	Sigsbee Deep
Okhotsk Sea	589,800	2,749	11,400	146° 10' E.; 46° 50' N.
East China Sea	482,300	617	9,126	25° 16' N.; 125° E.
Hudson Bay	475,800	420	600	Near entrance
Sea of Japan	389,100	4,429	12,276	Central Basin
Andaman Sea	308,000	2,854	12,392	Off Car Nicobar Island
North Sea	222,100	308	2,165	Skagerrak
Red Sea	169,100	1,611	7,254	Off Port Sudan
Baltic Sea	163,000	180	1,380	Off Gottland

* Including Black Sea and Sea of Azov. NOTE: For Caspian Sea, see Large Lakes of World elsewhere in this section.

Famous Waterfalls of the World

Waterfall	Location	River	Height, feet
Ángel	Venezuela	Tributary of Caroní	3,800
Cuquenán, or Kukuenaam	Venezuela-British Guiana	Cuquenán	2,000
Sutherland	South Island, N. Z.	Arthur	1,904
Tugela	Natal, South Africa	Tugela	1,800
Ribbon (Yosemite)	California	Creek, flowing into Yosemite	1,612
Upper Yosemite	California	Yosemite Creek, tributary of Merced	1,430
Gavarnie	Southwestern France	Gave de Pau	1,385
Takkakaw	British Columbia	Tributary of Yoho	1,200
Widow's Tears (Yosemite)	California	Tributary of Merced	1,170
Staubbach	Switzerland	Staubbach (Lauterbrunnen valley)	980
Trummelbach	Switzerland	Trummelbach (Lauterbrunnen)	950
Middle Cascade (Yosemite)	California	Yosemite Creek, tributary of Merced	910
Multnomah	Oregon	Multnomah Creek, tributary of Columbia	850
Vettisfos	Norway	Morkedöla	850
King Edward VII	British Guiana	Courantyne	840
Gersoppa	India	Sharavati	830
Kaletour	British Guiana	Pataro	741
Kalambo	Tanganyika-N. Rhodesia	.....	705
Fairy (Mt. Rainier Park)	Washington	Stevens Creek	700
Maradalsfos	Norway	Stream flowing into Ejkdalsvand (lake)	650
Skykkjefos	Norway	In Skykkjedal (valley) of Inner Hardanger Fiord	650
Terni	Italy	Velino, tributary of Nera	650
Maletsunyane (Le Bihan)	Basutoland, Africa	Maletsunyane	630
Bridal Veil (Yosemite)	California	Bridal Veil Creek, tributary of Merced	620
Nevada (Yosemite)	California	Merced	594
Voringfos	Norway	Bjorela	535
Skjaeggedalsfos	Norway	Tyssaa	525
Marina	British Guiana	Tributary of Kurlbrong, a tributary of the Pataro	500
Tequendama	Colombia	Bogotá	450
King George's	Cape Province, South Africa	Orange	450
Herval Cascades	Brazil	.....	400
Guayra	Paraguay-Brazil	Paraná	374
Illilouette (Yosemite)	California	Illilouette Creek, tributary of Merced	370
Granite (Mt. Rainier Park)	Washington	Granite Creek	350
Splendor of Sun	Nikko, Japan	.....	350
Victoria	Southern Rhodesia	Zambezi	343
Comet (Mt. Rainier Park)	Washington	Van Trump Creek	320
Lower Yosemite	California	Yosemite Creek	320
Vernal (Yosemite)	California	Merced	317
Virginia	Northwest Territories, Canada	South Nahanni, tributary of Mackenzie	315
Lower Yellowstone	Wyoming	Yellowstone	308
Grand	Labrador, Canada	Hamilton	302
Sluiskin (Mt. Rainier Park)	Washington	Paradise	300
Snoqualmie	Washington	Snoqualmie	270
Seven Falls	Colorado	.....	266
Tallulah	Georgia	Tallulah	251
Shoshone	Idaho	Snake	195
Narada (Mt. Rainier Park)	Washington	Paradise	168
Niagara	New York-Ontario	Niagara	167
Tower (Yellowstone)	Wyoming	Tower Creek, tributary of Yellowstone	132

Principal Rivers of the World

River	Source	Outflow	Approx. length, miles
Nile	Lake Victoria	Mediterranean Sea	4,160
Amazon	Glacier-fed lakes, Peru	Atlantic Ocean	3,900
Missouri-Mississippi	Source of Red Rock Creek, Montana	Gulf of Mexico	3,891
Ob	Altai Mts., U.S.S.R.	Gulf of Ob	3,200
Yangtze Kiang	Tibetan plateau	China Sea	3,100
Amur	Confluence of Shilka (U.S.S.R.) and Argun (Manchuria) Rivers	Tartary Strait	2,900
Congo	Between Lakes Nyasa and Tanganyika	Atlantic Ocean	2,900
Lena	Baikal Mts., U.S.S.R.	Arctic Ocean	2,800
Yenisei	Tannu Ola Mountains, western Mongolia	Arctic Ocean	2,800
Hwang Ho (Yellow)	East part of Kunlun Mts., west China	Gulf of Chihli	2,700
Niger	Border of Sierra Leone	Gulf of Guinea	2,600
Mackenzie	Head of Finlay River, British Columbia	Beaufort Sea (Arctic Ocean)	2,514
Mékong	Tibetan highlands	South China Sea	2,500
Missouri	Actual headwaters Red Rock Creek; beginning of Missouri at conflu- ence of Gallatin, Mad- ison, Jefferson Rivers	Mississippi River	2,475 (confluence) 2,723 (headwaters)
Mississippi	Lake Itasca, Minnesota	Gulf of Mexico	2,470
Paraná	Confluence of Paranaíba and Grande Rivers, southeast Brazil	Río de la Plata (Atlantic Ocean)	2,450
Murray	Australian Alps, New South Wales	Indian (Southern) Ocean	2,310
Irtish	Altai Mts., U.S.S.R.	Ob River	2,300
Volga	Valdai plateau, U.S.S.R.	Caspian Sea	2,300
Madeira	Confluence of Gauporé and Maumoré Rivers, Bolivia-Brazil border	Amazon River	2,000
St. Lawrence	St. Louis River, Minn.	Gulf of St. Lawrence	1,900
Purús	Southwest Amazonas, Brazil	Amazon River	1,850
Rio Grande	San Juan Mts., Colorado	Gulf of Mexico	1,800
São Francisco	Southwest Minas Geraes, Brazil	Atlantic Ocean	1,800
Yukon	Junction of Lewes and Pelly, Yukon Territory	Bering Sea	1,800
Salween	Tibet, south of Kunlun Mountains	Gulf of Martaban	1,750
Danube	Black Forest, Germany	Black Sea	1,725
Euphrates	Dumlu Dagh (moun- tains), Turkey	Persian Gulf	1,700
Indus	Himalayas	Arabian Sea	1,700
Orinoco	Sierra Parima on Vene- zuela-Brazil boundary	Atlantic Ocean	1,700
Tocantins	Near Pyrenopolis, southeast Brazil	Pará River (Atlantic Ocean)	1,700
Brahmaputra	Himalayas	Ganges River (Bay of Bengal)	1,680
Si Kiang	Plateau of Yunnan, southwest China	China Sea	1,650
Nelson	Head of Bow River, west Alberta, Canada	Hudson Bay	1,600
Zambezi	11°21'S.; 24°22'E., North- ern Rhodesia, Africa	Indian Ocean	1,600
Ganges	Himalayas	Bay of Bengal	1,540
Amu Darya (Oxus)	Nicholas Range, Pamir Mountains, U.S.S.R.	Lake Aral	1,500

River	Source	Outflow	Approx. length, miles
Paraguay	Mato Grosso, Brazil	Paraná River	1,500
Yapurá	Andes, Colombia	Amazon River	1,500
Arkansas	Central Colorado	Mississippi River	1,450
Colorado	Middle Park, northern Colorado	Gulf of California	1,440
Dnieper	Valdai Hills, U.S.S.R.	Black Sea	1,400
Negro	Watershed between Orinoco and Amazon	Amazon River	1,400
Ural	Southern Ural Mountains, U.S.S.R.	Caspian Sea	1,400
Ohio-Allegheny	Plateau in Potter County, Pa.	Mississippi River	1,306
Orange	Basutoland, Africa	Atlantic Ocean	1,300
Irrawaddy	Confluence of N'mai and Mali Rivers, northeast Burma	Bay of Bengal	1,250
Columbia	Columbia Lake, British Columbia	Pacific Ocean	1,214
Saskatchewan	Western Alberta, Canada	Lake Winnipeg	1,205
Darling	Central part of Eastern Highlands, Australia	Murray River	1,160
Tigris	Taurus Mts., Turkey	Euphrates River (Persian Gulf)	1,150
Sungari	Sungari Reservoir, Manchuria, China	Amur River	1,130
Don	Lake Ivan, U.S.S.R.	Sea of Azov	1,100

Large Lakes of the World

Name and location	Area, sq. mi.	Length, miles	Maximum depth, feet	Elevation above sea level, feet
Caspian, U.S.S.R.—Iran†	169,300	795	3,612	-86
Superior, U. S. A.—Canada	31,820	383	1,302	622
Victoria, East Central Africa	26,828	250	270	3,717
Aral, U.S.S.R.	26,233	280	222	155
Huron, U. S. A.—Canada	23,010	206	750	581
Michigan, U. S. A.	22,400	321	923	581
Baikal, U.S.S.R.	13,300	385	5,413	1,515
Tanganyika, East Central Africa	12,700	420	4,708	2,534
Great Bear, Canada	12,000	195	270*	391
Great Slave, Canada	11,170	325	—	495
Nyasa, Southern Africa	11,000	350	2,580	1,650
Erie, U. S. A.—Canada	9,940	241	210	572
Winnipeg, Canada	9,398	260	70	712
Ontario, U. S. A.—Canada	7,540	193	778	246
Balkhash, U.S.S.R.	7,115	430	36	900
Ladoga, U.S.S.R.	7,000	125	730	55
Onega, U.S.S.R.	3,764	145	408	125
Rudolf, Eastern Africa	3,475	185	—	1,250
Titicaca, Bolivia—Peru	3,200	125	892	12,507
Nicaragua, Nicaragua	3,089	110	200	135
Athabaska, Canada	3,058	195	—	699
Reindeer, Canada	2,444	155	—	1,150
Issyk-Kul, U.S.S.R.	2,230	115	2,300	5,400
Koko Nor, China	2,200	66	—	10,000
Vänern, Sweden	2,143	87	292	144
Winnipegosis, Canada	2,086	122	38	831
Bangweulu, East Central Africa	1,900	60	15	3,700
Nipigon, Canada	1,870	70	—	852
Manitoba, Canada	1,817	120	12*	813
Urmia, Iran	1,750*	80-90	50	4,184
Albert, Uganda, Africa	1,640	100	50	2,037
Dubawnt, Canada	1,600	65	—	500
Great Salt, U. S. A.	1,500	75	15-25*	4,218
Van, Turkey	1,453	80	—	5,643

* Average. † The name Caspian Sea is a misnomer; it is a land-locked lake, so classified by oceanographers.

Volcanoes of the Earth

There are approximately 430 volcanoes (275 in the Northern Hemisphere and 155 in the Southern) with recorded eruptions in historical times. Of the 2,500 recorded eruptions, more than 2,000 have taken place in the Pacific area. Of known active volcanoes, about 80 are of the submarine type.

ATLANTIC-INDIAN AREA

Mediterranean Region

Italy: Mt. Vesuvius, southeast of Naples (3,858 ft.). Only active volcano on mainland of Europe. Pompeii buried by an eruption, A.D. 79. Latest eruption in 1944.

Sicily: Mt. Etna, eastern Sicily (10,741 ft.). Two new craters formed in eruptions of Feb.-Mar., 1947. Worst eruption in 50 years occurred Nov., 1950-Jan., 1951.

Lipari Islands (north of Sicily): Stromboli (about 3,000 ft.). Called "Lighthouse of the Mediterranean." Erupted 1956.

Atlantic Area

Canary Islands: Pico de Teide (Teneriffe), on island of Teneriffe (12,192 ft.).

Cape Verde Islands: Fogo (over 8,000 ft.). Severe eruption in 1857; last until 1951.

Iceland: At least 25 volcanoes active in historic times. These volcanoes very similar to those in Hawaii.

Hekla (4,747 ft.). Several craters, largest about 1½ mi. in circumference. Most recent eruptions reported in 1947-48.

Skaptarjökull. Series of volcanoes near Skaptar; erupted in 1783 with large loss of life and produced largest known single output of lava.

Askja (4,600 ft.). Largest in Iceland.

Jan Mayen Island: Beerenberg, northern part of island (over 8,000 ft.). Extinct.

British Cameroons: Mt. Cameroon (13,353 ft.). Has several craters. Last erupted in 1922.

Lesser Antilles (West Indian Islands): Mt. Pelée, in northwestern Martinique (about 4,400 ft.). Eruption in 1902 destroyed town of St. Pierre and killed approximately 40,000.

Indian Ocean Region

Comoro Islands (east of northern Mozambique): One volcano, Kartala (over 8,500 ft.), is visible for over 100 miles. Last erupted in 1904.

Réunion Island (east of Madagascar): Piton de la Fournaise (Le Volcan) (8,610 ft.). Large lava flows.

Tanganyika Territory: Kilimanjaro (19,565 ft.). Extinct. Highest mountain in Africa.

THE PACIFIC AREA

Northwest Portion

Kamchatka: 14-18 active volcanoes.

Shiveluch (over 10,500 ft.). Most northerly volcano of Kamchatka group.

Klyuchevskaya (Kluchev) (15,912 ft.). Erupted 1954.

Koryatskaya (over 11,500 ft.). Violent eruption in 1895.

Kurile Islands: At least 13 active volcanoes and several submarine outbreaks.

Japan: at least 33 active vents.

Fujiyama (Fujisan), southwest of Tokyo (12,385 ft.). Symmetrical in outline, snow-covered. Regarded as a sacred mountain. Adzumayama (7,733 ft.).

Asamayama (8,182 ft.). Continuously active; violent eruption in 1783; latest in 1955.

Asosan (5,223 ft.). Crater 10 by 15 miles is the largest known in the world; erupted most recently in 1953, killing several students.

Bandaisan, about 125 miles north of Tokyo (9,037 ft.). Violent eruption in 1888 devastated a 27-square-mile area.

Ryukyu archipelago: Nakano-shima (3,485 ft.); Suwanose-shima (2,697 ft.).

Bonin (Ogasawara) Islands: Mt. Suribachi, on Iwo Jima (546 ft.). A sulfurous steaming volcano. Raising of U. S. flag over Mt. Suribachi was one of the dramatic episodes of World War II.

New Britain archipelago: Numerous active vents, including Father, on New Britain (7,500 ft.).

Santa Cruz Islands: Tinakula (2,200 ft.).

New Hebrides: Lopevi (4,755 ft.).

Samoa archipelago: Savail. An eruption in 1905 did considerable damage. Niuafuou (Tin Can) between Samoa and Fiji Islands has a crater 6,000 feet below and 600 feet above water.

Philippine Islands: about 100 eruptive centers; Hibok Hibok on Camiguin island erupted in Sept. 1950, and again in Dec. 1951, when about 750 were reported killed or missing; eruptions continued in 1952-53.

Taal, on Volcano Island in Lake Bombon (about 1,000 ft.). Crater over 7,500 ft. in diameter.

Mayon, in southeastern Luzon (7,946 ft.). An almost perfect cone. Continuous mild activity. Destructive eruption in 1897.

Moluccas: A volcanic chain of islands which contains several active volcanoes.

Hawaiian Group:

Mauna Loa (13,680 ft.). Also called "Long Mountain." Discharges more lava than any other volcano. Largest volcanic mountain in the world in cubic content, with crater of 3.7 sq. mi. Violent eruption in June, 1950, with lava pouring 25 mi. into the ocean.

Mauna Kea (13,784 ft.). Highest mountain in group.

Hualalai (8,269 ft.). Has many small pit craters. Only lava flow in historic times was in 1801.

Kilauea (4,090 ft.). A vent in side of Mauna Loa but apparently erupts independently of it. One of the most spectacular and active craters. Crater has an area of 4.14 sq. mi. Erupted 1952 and again in 1955, with considerable damage.

Southwest Portion

Sumatra: Ninety volcanoes have been discovered; 12 are now active. The most famous, Krakatoa, is a small volcanic island in the Sunda Strait. Numerous volcanic discharges occurred in 1883. One explosion caused the disappearance of the highest peak and the northern part of the island. Fine dust was carried around the world in the upper atmosphere. Over 36,000 persons lost their lives in resultant tidal waves, which were felt as far away as Cape Horn. Active in 1928, 1950 and 1953.

Java: Thirteen of 125 volcanic centers are active. Few serious eruptions. Galunggung is famous for two destructive eruptions in 1822. It is thought that over 100 villages and about 4,000 lives were lost. Eruption of Merapi in 1954 caused number of deaths; it was active again in 1957.

Lesser Sunda Islands: Fifteen eruptive cones. Tamboro on Soembawa (Sumbawa) (about 9,000 ft.) was 13,000 ft. prior to a severe eruption in 1815, which ejected an estimated 36 cu. mi. of material.

Melanesian area: Volcanoes are located on New Guinea, New Hebrides, Santa Cruz, Solomons, and on numerous other small islands. Eruption of Mt. Lamington in Papua Territory, New Guinea, in Jan., 1951, killed more than 3,000.

New Zealand: Tarawera, on North Island. Severe eruption in 1886 destroyed the famous pink and white sinter terraces of Rotomahana, a hot lake.

Ngauruhoe (7,515 ft.). Emits steam and vapor incessantly. Major eruptions, 1952-54.

Northeast Portion

Aleutian area: There are 32 active vents known, and numerous inactive cones.

Shisaldin, on Unimak (8,683 ft.). Latest eruption Jan., 1947.

Bogosloff, on Bogosloff island (Castle) (about 1,000 ft.). Mountain first appeared after an eruption in 1796.

Alaska:

Wrangell (14,005 ft.) and Katmai (about 7,500 ft.).

On June 6, 1912, a violent eruption of the volcano Nova Rupta occurred, during which the "Valley of Ten Thousand Smokes" was formed.

United States: Lassen Peak, in California (10,453 ft.). Only observed active volcano in the United States. Last period of activity in 1914-17. Other mountains of volcanic origin include Mt. Shasta, Mt. Hood,

Mt. Rainier, and the mountain that contains Crater Lake.

Mexico:

Popocatepetl (17,883 ft.). Crater 673 ft. deep and $2\frac{1}{2}$ mi. in circumference. Not entirely extinct; steam still escapes.

Colima (14,239 ft.), in group that has had frequent eruptions.

Orizaba (Citlaltepetl) (18,696 ft.).

Tuxtla (4,900 ft.). Had a violent eruption in 1793 but is now quiescent.

Paricutín. First appeared in Feb., 1943. In less than a week a cone over 140 ft. high developed with a crater one quarter mile in circumference. Cone grew over 1,500 ft. in 1943. Erupted 1952.

Boquerón ("Big Mouth"). Newest volcano in Western Hemisphere, discovered Sept., 1952 on San Benedicto island, about 250 mi. south of Lower California.

Guatemala:

Santa María Quezaltenango (12,361 ft.). Frequent activity between 1902-08 and 1922-28 after centuries of quiescence. Most dangerously active vent of Central America. Other volcanoes include Tajumulco (13,814 ft.) and Atitlán (11,633 ft.).

El Salvador: Izalco, "beacon of Central America," which first appeared in 1770 and is still growing (erupted in 1950, 1956); San Salvador, which had a violent eruption in 1923 and Conchagua, which erupted with considerable damage early in 1947.

Nicaragua: Volcanoes include Telica, Coseguina and Momotombo. Between Momotombo on the west shore of Lake Managua and Coseguina overlooking the Gulf of Fonseca, there is a string of more than 20 cones, many still active. One of these, Cerro Negro, erupted in July, 1947, with considerable damage and loss of life, and again in 1948-50.

Costa Rica: Four volcanic cones whose bases merge are Poás (8,895 ft.), Barba (9,280 ft.), Irazú (10,525 ft.), and Turrialba (11,350 ft.).

Southeast Portion

Colombia: Huila (18,700 ft.), a vapor-emitting volcano, and Tolima (17,109 ft.).

Eruption of Puracé (15,420 ft.), 1949, killed 17.

Ecuador: Cotopaxi (19,344 ft.). Perhaps highest active volcano in the world. Possesses a beautifully formed cone.

Cayambe (19,170 ft.). Almost on equator. Other volcanoes include Tunguragua (16,689 ft.) and Sangay (17,470 ft.).

Peru and Bolivia: Many active volcanoes, Misti, near Arequipa, Peru (19,167 ft.). Sajama, in Bolivia (21,391 ft.).

Licancábur, in Bolivia (about 19,500 ft.).

Chile and Argentina: About 25 active or potentially active; destructive eruptions of Villarrica, Chile, 1948, and of Nilahue and Riñihue, 1955.

Interesting Caves and Caverns of the World

Aggtelek. In village of same name, northern Hungary. Large stalactitic cavern about 5 miles long.

Altamira Cave. Near Santander, Spain. Contains animal paintings (Old Stone Age art) on roof and walls.

Antiparos. On island of same name in the Grecian Archipelago. Some stalactites are 20 ft. long. Brilliant colors and fantastic shapes.

Blue Grotto. On island of Capri, Italy. Cavern hollowed out in limestone by constant wave action. Now half filled with water because of sinking coast. Name derived from unusual blue light permeating the cave. Source of light is a submerged opening, light passing through the water.

Carlsbad Caverns. Southeast New Mexico. Largest underground labyrinth yet discovered. Three levels: 754, 900, and 1,320 feet below the surface.

Fingal's Cave. On island of Staffa off coast of western Scotland. Penetrates about 200 ft. inland. Contains basaltic columns almost 40 ft. high.

Ice Cave. Near Dobsina, Czechoslovakia. Noted for its beautiful crystal effects.

Jenolan Caves. In Blue Mountain plateau, New South Wales, Australia. Beautiful stalactitic formations.

Source of much information on Paleolithic man.

Geysers exist in many volcanic regions of the world such as Japan and South America, but their greatest development is in Iceland, New Zealand and Yellowstone National Park, Wyoming, U. S. A.

Iceland. The principal geyser area is about 30 miles northwest of Mt. Hekla, where there are more than 100 geysers and hot springs in about two square miles. The main ones are the following:

Great Geyser (Geysir). Sends up a column 160 to 180 ft. high intermittently from an opening more than 9 ft. across and about 70 ft. deep.

Strokkur (Churn). Constant bubbling and occasional eruptions.

New Zealand. There is a great profusion of boiling springs, steam jets and mud volcanoes northeast of Lake Taupo on North Island. Main geysers are *Waikite*, with a 30-35 ft. column, *Pohutu* and *Waimauku*.

United States

Yellowstone National Park, Wyoming. There are 120 named geysers in Yellowstone and perhaps half that number un-

Luray Cavern. Near Luray, Virginia. Has large stalactitic and stalagmitic columns of many colors.

Mammoth Cave. Limestone cavern in central Kentucky. Cave area is about 10 miles in diameter but has at least 150 miles of irregular subterranean passageways at various levels. Temperature remains fairly constant at 54°F.

Peak Cavern or Devil's Hole. Derbyshire, England. About 2,250 ft. into a mountain. Lowest part is about 600 ft. below the surface.

Postumia (Adelsberg) Grotto. Near Postumia in Julian Alps, about 25 miles N.E. of Trieste. Stalactitic cavern, largest in Europe. *Pluca* (Pivka) River flows through part of it. Caves have numerous beautiful stalactites.

Singing Cave. Iceland. A lava cave; name derived from echoes of people singing in it.

Wind Cave. In Black Hills of South Dakota. Limestone caverns with stalactites and stalagmites almost entirely missing. Variety of crystal formations called "boxwork."

Wyandotte Cave. In Crawford County, southern Indiana. A limestone cavern with five levels of passages; one of the largest in North America. "Monumental Mountain," approximately 135 ft. high, is believed to be one of the world's largest underground "mountains."

Geysers

named. Most of the geysers and the 4,000 or more hot springs are located in the western portion of the park. The most important are the following:

Norris Geyser Basin has 24 or more active geysers; the number varies. There are scores of steam vents and hot springs. *Valentine* is highest, erupting 50-75 ft. at intervals varying from 18 hr. to 3 days or more. *Minute*, 15-20 ft. high, several hours apart. Others include *Steamboat*, *Fearless*, *Veteran*, *Vixen*, *Corporal*, *Whirligig*, *Little Whirligig* and *Pinwheel*.

Lower Geyser Basin has at least 18 active geysers. *Fountain* throws water 50-75 ft. in all directions at unpredictable intervals. *Clepsydra* erupts violently from four vents up to 30 ft. *Great Fountain* plays every 8 to 15 hr. in spurts from 30 to 90 ft. high.

Midway Geyser Basin has vast steaming terraces of red, orange, pink and other colors; there are pools and springs, including the beautiful *Grand Prismatic Spring*. *Excelsior* crater discharges boiling water into Firehole River at the rate of 6 cu. ft. per second.

Upper Geyser Basin includes *Artemisia*, which sends up a column 15-35 ft. every 24 to 30 hr. *Riverside* has an unusual cone; it throws water 75 ft. obliquely over the river for half an hour. Interval ranges from 6 to 8½ hr.

Rocket is irregular and unpredictable, as is its neighbor *Grotto*.

Giant erupts up to 200 ft. at intervals of 2½ days to 3 mo.; eruptions last about 1½ hr. *Daisy* sends water up to 75 ft. but is irregular and frequently inactive.

Old Faithful sends up a column varying from 116 to 175 ft. at intervals of about 65 min., varying from 33 to 90 min. Eruptions last about 4 min., during which time about 12,000 gal. are discharged.

Giantess seldom erupts, but during its active periods sends up streams 150-200 ft.

Lion Group: *Lion* plays up to 60 ft. every 2-4 days when active; *Little Cub* up to 10 ft. every 1-2 hr. *Big Cub* and *Lioness* seldom erupt.

Castle usually erupts twice daily to a height of 75 ft.

Mammoth Hot Springs. There are no geysers in this area. The formation is travertine. Sides of a hill are steps and terraces over which flow the steaming waters of hot springs laden with minerals. Each step is tinted by algae to many shades of orange, pink, yellow, brown, green and blue. Terraces are white where no water flows.

Other groups of geysers, hot pools and mud pots are located on the west shore of Shoshone Lake, on West Thumb Bay, at Mud Volcano, in the Grand Canyon of the Yellowstone, and on Mirror Plateau.

Famous Ship Canals of the World

Name	Location	Year opened	Length (mi.)†	Width (ft.)	Depth (ft.)	Locks
Albert	Belgium	1939	80.0	53.0	16.5	6
Amsterdam-Rhine	Netherlands	1952	45.0	164.0	41.0	3
Beaumont-Port Arthur	United States	1916	40.0	200.0	34.0	..
Chesapeake and Delaware	United States	1927	19.0	250.0	27.0	..
Houston	United States	1914	43.0	300.0	34.0	..
Kiel	Germany	1895	61.3	144.0	36.0	4
Panama	Canal Zone	1914	50.0	110.0	41.0	12
Sault Ste. Marie	Canada	1895	1.2	60.0	16.8	1
Sault Ste. Marie	United States	1915	1.6	80.0	25.0	4
Suez	Egypt	1869	100.6*	197.0	34.0	..
Welland	Canada	1931	27.6	80.0	25.0	8

* From Port Said lighthouse to entrance channel in Suez roads. † In statute miles.

World Extremes of Climate

Highest recorded shade temperature:

World: 136° F. at Azlizia, Libya, North Africa, September 13, 1922.

United States: 134° F. at Death Valley, California, July 10, 1913.

Lowest recorded temperature:

World -100.4° F. near the South Pole, Antarctica, May 11, 1957. In Siberia, -89.9° F. at Oimekon, February 6, 1933, and -89.7° F. at Verkhoyansk, February 5 and 7, 1892.

United States: -70° F. at Rogers Pass, Montana, January 20, 1954.

Highest mean annual temperature:

World: 88° F. at Lugh, Somaliland, Africa, 13-year average.

United States: 77.6° F. at Key West, Florida, 30 year normal.

Maximum rainfall for 24-hour period:

World: 46 inches at Baguio, Luzon, Philippines, July 14-15, 1911.

United States: 26.12 inches at Hoegees Camp, California, January 22-23, 1943. (Unofficially observed, 38.20 inches at Thrall, Texas, September 9-10, 1921.)

Maximum rainfall in one month:

World: 366.14 inches at Cherrapunji, India, July, 1861 (over 150 inches fell in 5 consecutive days in August, 1841).

United States: 71.54 inches at Helen Mine, California, January, 1909.

Maximum average annual precipitation (calendar year):

World: 471.68 inches at Mt. Waialeale, Island of Kauai, Hawaiian Islands, 1912-1949; 450 inches at Cherrapunji, India, 74 year average.

United States: 150.73 inches at Wynoochee, Washington, 13 year average.

Minimum average annual precipitation (calendar year):

World: 0.02 inch at Arica, Chile, 43 year average.

United States: 1.66 inches at Greenland Ranch, California, 44 year average. (Bagdad, California holds the U. S. record for the longest period with no measurable rain, 767 days, Oct. 3, 1912 to Nov. 8, 1914.)

Lowest mean annual temperature:

World: -60° F. (estimated) near South Pole, Antarctica.

United States: 26.9° F. at Mount Washington, N. H., 24 year average.

Other U. S. precipitation extremes:

Wettest state: Louisiana, 65 year annual average of 57.34 inches.

Driest state: Nevada, 66 year annual average of 8.60 inches. (Average annual precipitation for the United States is about 29 inches.)

Heavy U. S. snowfall records:

Greatest average annual: 575.1 inches at Paradise Ranger Station, Rainier Park, Washington.

Greatest amount in one season: 1000.3 inches at Paradise Ranger Station, Rainier Park, Washington, 1955/56.

Greatest amount in a calendar month: 390 inches at Tamarack, California, Jan., 1911.

Greatest in 24 hours: 76 inches at Silver Lake, Colorado, April 14-15, 1921. (This storm, April 12-15, produced highest known rates in U. S. for durations up to 3 days—95 inches in 48 hours; 98 inches in 72 hours; 100 inches in 85 hours.)

In the New York City blizzard of December 26, 1947, 25.8 inches of snow fell in about 20 hours, almost 5 inches more than fell in the blizzard of March, 1888.

Largest hailstone definitely recorded in U. S.: 1½ pounds by weight, at Potter, Nebraska, July 6, 1928.

Ancient Empires

The *Egyptian* and *Babylonian* empires, Near Eastern civilizations whose cultures mark the beginning of written history, had their origins in the nebulous period of ancient history prior to the year 4000 B.C. They developed rapidly in the fertile river valleys of the Nile in Egypt and the Tigris-Euphrates in Mesopotamia after the discovery of metals and the invention of writing. Their governments were all-powerful, with the people subjugated and without political rights. The Egyptians regarded their king as a god. In Babylon, the ruler was a priest-king, earthly representative of the gods. Nevertheless, these Near East cultures made great contributions to the eternal march of man; they advanced the ways of making and doing things, produced the earliest literature, developed the principles of law (the code of Hammurabi, Babylonian king of the 18th [or possibly 17th] century B.C., the oldest code of law) and science.

The influence of Babylon and Egypt was felt in the rise of the Semitic tribes of Syria, the Hittites in Asia Minor, and the people of the Aegean region. Between the years 1200 and 800 B.C., the small Syrian states grew to great power and then were overwhelmed by the great empire of the *Assyrians*, the warlike peasants of the Tigris valley, who took the lessons learned from the Babylonians and spread that culture over their domains. The Assyrians, like the Egyptians and the Babylonians, in turn fell under the power of the *Persian* kings in the century between 600 and 500 B.C. By 525 B.C., the Persian Empire extended from India to Egypt.

The lessons learned by these early Near Eastern civilizations were transmitted to *Greece*, which developed its illustrious empire in the Aegean region, after the inhabitants of the island of Crete had absorbed the Egyptian culture. The mainland Greeks overthrew the Cretans and in turn were succeeded by the Doric Greeks, who spread their culture across the Aegean, the Asia Minor coast, and into the Mediterranean and Black Sea regions. The char-

acteristic Greek political institution was the city-state, first ruled by kings and often temporary monarchical tyrannies, and finally by the participation of free citizens. Literature and the arts flourished, and by the 5th century B.C., when Athens became the great city of the Greeks, drama had risen to full maturity with the great tragedies of Sophocles and Euripides and the comedies of Aristophanes. Architecture and art advanced apace. The Greeks, learning much from their Egyptian teachers, produced such superb buildings as the Parthenon and created amazingly beautiful statues through the use of living models. Religion, which was closely linked with art, also flourished, as did the development of philosophy, under Socrates, Plato and Aristotle. Wars weakened the city-states, and they fell to Alexander the Great in the 4th century B.C.

Last among the great ancient empires was the *Roman*, which developed in Italy and gained control over the Mediterranean region after absorbing the culture of Greece and combining with it new principles of law and art and teaching this new learning to the West. The development of the Roman civilization began in 510 or 509 B.C., when the peoples on the peninsula of Italy freed themselves from the rule of the Etruscans. The Romans, with a republican form of government, speedily conquered Italy and the Mediterranean region, and the Roman governors became men of great wealth, corrupting the city-state system and making it a graft-ridden machine of exploitation. The failure of the government to check this self-seeking influence brought on a revolt which resulted eventually in the rise of Julius Caesar to dictatorship in 46-44 B.C. Caesar's murder in the Senate at Rome was followed in 27 B.C. by the establishment of the one-man rule of Augustus over the Roman Empire. Legal practices were developed and became the foundations of modern law. This great ancient civilization began to crumble in the 3d century A.D.

Languages of the World

(spoken natively by 5,000,000 or more people)

Language	Number speaking	Language	Number speaking
American Indian: including Mayan, Quéchuá and 750-1,000 other languages and dialects	15,000,000	Bisayan, Ilocano, Javanese, Madurese, Malay, Malagasy, Sundanese, Tagalog	105,000,000
Amharic (Ethiopia)	5,600,000	Iranian: including Baluchi, Kurdish, Persian, Pushtu	26,500,000
Annamese (Indo-China)	20,000,000	Italian	50,000,000
Arabic	65,000,000	Japanese	90,000,000
Bantu: including Swahili, Zulu (S. Africa)	45,000,000	Javanese	41,000,000
Bengali (India; Pakistan)	70,000,000	Kanarese (India)	14,000,000
Berber dialects (N. Africa)	6,000,000	Korean	30,000,000
Bihari (India)	37,000,000	Lahnda (India; Pakistan)	13,000,000
Bisayan (Philippines)	9,000,000	Madurese (Indonesia)	6,500,000
Bulgarian	7,000,000	Malay (Indonesia)	14,000,000
Burmese	13,000,000	Malayalam (India)	14,000,000
Catalan (Spain)	6,000,000	Marathi (India)	27,000,000
Chinese: including Mandarin, Cantonese and others	475,000,000	Munda (India)	5,000,000
Cushitic: including Somali (Ethiopia)	7,000,000	Oriya (India)	13,000,000
Czech	8,500,000	Persian	12,000,000
Dravidian: including Kanarese, Malayalam, Tamil, Telugu (India)	95,000,000	Polish	30,000,000
Dutch	15,000,000	Portuguese	63,000,000
English	265,000,000	Punjabi (India; Pakistan)	22,000,000
Ethiopian: including Amharic	6,400,000	Pushtu (Afghanistan; Pakistan)	8,000,000
Finno-Ugric: including Estonian, Finnish, Hungarian, Karelian, Lappish	21,500,000	Rajasthani (India; Pakistan)	17,000,000
Flemish (Belgium)	5,000,000	Rumanian	16,000,000
French	65,000,000	Russian	200,000,000
German	90,000,000	Serbo-Croatian (Yugoslavia)	15,000,000
Greek	8,000,000	Siamese	16,000,000
Gujarati (India; Pakistan)	16,000,000	Sinhalese (Ceylon)	5,500,000
Hausa (Central Africa)	9,000,000	Spanish	150,000,000
Hindi (India; Pakistan)	150,000,000	Sudanese: including Hausa (Central Africa)	75,000,000
Hungarian	13,000,000	Sundanese (Indonesia)	13,000,000
Indic: including Assamese, Bengali, Bihari, Gujarati, Hindi, Lahnda, Marathi, Oriya, Punjabi, Rajasthani, Sindhi, Sinhalese	415,000,000	Swahili (E. Africa)	8,000,000
Indonesian: including Balinese,		Swedish	7,000,000
		Tagalog (Philippines)	5,000,000
		Tamil (India)	27,000,000
		Telugu (India)	33,000,000
		Tibeto-Burman: including Tibetan and Burmese	20,000,000
		Turkic: including Kazakh, Tatar, Turkish, Uzbek	45,000,000
		Turkish	20,000,000
		Uzbek (U.S.S.R.)	6,000,000
		Yiddish	5,000,000

Universities—Medieval and Modern

Universities, in the modern sense of the term, sprang up in the 12th and 13th centuries in response to the resurgence of learning that preceded the Renaissance in Europe. Procedure at the early universities was informal, with students gathering at some place in a city to listen to a pre-eminent teacher. There were no campuses, buildings or endowments. Actually, the term "university" once meant a guild or corporation; there were, in the medieval period, "universities" of bootmakers, weavers, etc. Thus the university of learning was similar in organization to the guilds. The students filled the role of apprentices and the teachers were the masters.

The first European university was that of *Salerno* in the 9th century, when it was known as a school of medicine. By the 11th century, it had become one of the most famous medical schools of Europe.

University of Bologna. Originated about 1200 as student guilds for protection against the merchants and citizens of Bologna who had raised prices of food and lodging. It was famous for its legal scholars. The students were organized into two guilds and exercised a great deal of authority over the administration.

Other Italian universities famed in the Middle Ages included those at *Arezzo*, *Fer-*

rara, Florence, Modena, Naples, Padua, Padua, Perugia, Siena and Vicenza.

University of Paris. Originated between 1150 and 1170 in a cathedral school on the Ile de la Cité, it was later moved to the left (south) bank of the Seine, although it remained under the authority of the chancellor of Notre Dame. It developed into the most famous continental center of learning of its day. Its four principal schools were theology, medicine, law and arts. By the 14th century, the university had some 40 colleges, of which the *Sorbonne* became the most celebrated.

The universities of Paris and Bologna had a marked influence in the subsequent creation of other university centers. About 1167-68 there was a migration of students from Paris to Oxford (founded in the 12th century) and about 1210, from Oxford to Cambridge (also founded in the 12th century).

Other famous universities of the Middle Ages include the *University of Toulouse* (1233), *Salamanca* (1243), *Seville* (1254), *Orléans* (1305), *Valladolid* (1346), *Prague* (1347), *Kraków* (1364), *Vienna* (1364), *Erfurt* (1379), *Heidelberg* (1385), *Cologne* (1388), *Leipzig* (1409), *Rostock* (1419) and *Louvain* (1426).

The Renaissance

The Renaissance gave fresh impetus to the universities of Europe. In France three of importance arose in the 15th century—the *University of Aix* (1409, Provence), the *University of Poitiers* (1431) and the *University of Caen* (1437).

Other French institutions of note that arose in this era were at *Bordeaux* (1441), *Valence* (1452), *Nantes* (1463) and *Bourges* (1465). New European universities were also founded at *Trier* (1450), *Freiburg* (1455), *Ingolstadt* (1459), *Basel* (1460), *Budapest* (1475), *Mainz* (1476), *Uppsala* (1477), *Tübingen* (1477), *Copenhagen* (1479), *Wittenberg* (1502), *Frankfurt on Oder* (1506) and *Coimbra* (1537).

St. Andrews, founded in 1411, was the first university in Scotland. Others were the *University of Glasgow* (1453) and the *University of Aberdeen* (1494). The *College of Edinburgh* was established in the post-Reformation period (1582). In Ireland, *Trinity College* was founded in Dublin in 1591.

Reformation and Post-Reformation

Until the Reformation, most of the institutions of higher learning in Europe were under the tutelage of the Catholic Church. After 1520, however, many established universities declared their independence of the Church. Cromwell's rule brought about new scholastic methods at both Oxford and Cambridge and the es-

tablishment of new colleges thoroughly imbued with Protestantism.

But the first Protestant university was that of *Marburg*, Germany, founded in 1527. Other Protestant universities were: *Königsberg* (1544); *Jena* (1558); *Helmstedt* (1575); *Altdorf* (1575); *Giessen* (1607); *Strasbourg* (1621); *Halle* (1693).

18th, 19th and 20th Centuries

Among the more famous institutions in this era was *Göttingen* (1736), whose school of history became celebrated throughout Europe. Others were: *Erlangen* (1743); *Berlin* (1809); *Lemberg* (Lwów) (1816); *Bonn* (1818); *Helsingfors* (1828); the *National University at Athens* (1837); *Bucharest* (1864); *Tokyo* (1877); *Sofia* (1888) and *Kyoto* (1897).

Among the more famous British universities established in the 19th and 20th centuries were the *University of London* (1828); *Manchester* (1851); the *Mason University College* in Birmingham, later *Birmingham University* (1900); *Liverpool* (1903); *Leeds* (1904); and the *University of Sheffield* (1905). The *University of Wales* (1893) is composed of the colleges of *Aberystwyth*, *Bangor* and *Cardiff*.

There are many large and important universities in the British Commonwealth. In Canada, the famous *McGill University* in Montreal was founded in 1821. Others are the *University of Toronto* (1827); *Queens University* at Kingston, Ont. (1841); *Laval University*, Quebec (1852); *Dalhousie*, Halifax (1818), and *Montreal University* (1878).

The early universities in India were patterned after London University rather than on the Oxford-Cambridge style, and were purely examining institutions. *Calcutta*, *Bombay* and *Madras* universities were founded in 1857 as examining bodies.

In Australia, the state plays an important role in the development of universities. The *University of Melbourne* (1853) has the largest enrollment. Among the others are *Adelaide* (1874); *Tasmania* (1890); *Queensland* (1909); *Sydney* (1850), and *Western Australia* (1911).

There are also many well-endowed universities in New Zealand, South Africa, and other parts of the Commonwealth.

By 1800, Russia had only three universities—*Vilna* (1578), *Dorpat* (1632) and *Moscow* (1755). Other institutions developed later were the *University of Kharkov* (1804); *Kazan* (1804); *Warsaw*, now Polish (originally established 1816, but closed 1832-69); *St. Petersburg* (1819); *St. Vladimir* in Kiev (1835); *Odessa* (1865) and *Tomsk*, in Siberia (1888). The building of universities after the Revolution of 1917 was spurred by the Soviet government.

In China, the growth of universities was hampered by the chaotic state of the government in the 1900's, the recurring civil wars and the conflict with Japan.

The United States

Universities in the United States marched in step with the progress of the nation. The early settlers brought a heritage of European culture which they planted in New England soil. The first university in the country was started as *Harvard College* in 1636, with an endowment totaling 800 pounds. Harvard was to become probably the most famous of the American universities.

The *College of William and Mary* (1693) was the second institution of higher learning established in the colonies. Others started during the colonial period (current names only) are: *Yale* (1701); *University of Pennsylvania* (1740); *Princeton* (1746); *Washington and Lee* (1749); *Columbia* (1754); *Brown* (1764); *Rutgers* (1766) and *Dartmouth* (1770).

After the Revolution of 1776, the state tax-supported university was established. The *University of Virginia* (1819) was a notable early example of this type.

Colleges for women grew up in the second quarter of the 19th century. Among these are: *Mt. Holyoke* (1837); *Elmira* (1855); *Vassar* (1861); *Wells* (1868); *Hunter* (1870); *Wellesley* (1870); *Smith* (1871) and *Bryn Mawr* (1880).

In the latter part of the 19th century, universities established by private endowments arose. Typical of these are: *Cornell* (1865), which is also a land-grant institution; *Johns Hopkins* (1876); *Stanford* (1885) and the *University of Chicago* (1890).

Libraries of the World

Europe and Asia

Among the great libraries of the world, the *British Museum* remains in the first rank with more than 6,000,000 printed volumes and 60,000 manuscripts. It contains such outstanding treasures as the *Codex Alexandrinus* and the *Codex Sinaiticus* of the Bible, the best collection of Greek papyri from Egypt, and vast collections of original historical manuscripts of incalculable value. Some 150,000 volumes were destroyed in air raids during World War II, but many were replaced later.

One of the finest libraries in the world is the *Bibliothèque Nationale* in Paris, which has approximately 6,000,000 volumes, 155,000 manuscripts, 450,000 medals and coins, 5,000,000 prints and engravings and 400,000 maps.

The *State Library* in Berlin, founded in 1659-61, was amalgamated in 1947 with the library of the University of Berlin. Prior to World War II, the *State Library* had 2,850,000 volumes; the new combined library had only 1,500,000. The *State Library* at Munich also suffered extensive war losses, with some 500,000 volumes destroyed; it now contains about 2,000,000. Estimates have placed the war losses of all German libraries at between 20 and 25 million volumes.

The *Nationalbibliothek* in Vienna has about 1,500,000 volumes, a large collection of papyri, and a notable theater and motion picture collection.

While not as large as some of the European state libraries, the *Biblioteca Apostolica Vaticana* in Rome has many priceless old manuscripts bequeathed to the Vatican over the centuries, including the *Codex Vaticanus* of the 4th century.

Three of the more important Italian libraries are the *Biblioteca Nazionale* in Naples, with about 1,400,000 volumes; the *Biblioteca Nazionale Centrale* in Florence, with 4,000,000 volumes; and the *Biblioteca Nazionale Centrale* in Rome, with approximately 1,970,000 volumes.

Other large European libraries are the *Bibliothèque Royale* in Brussels (2,000,000 volumes), the *Biblioteca Nacional* in Madrid (1,500,000), the *University Library* at Amsterdam (more than 1,500,000) and the *Royal Library* in Stockholm (900,000). The *Lenin State Library* in Moscow is said to contain 15,000,000 volumes (a figure that probably includes periodicals), besides many collections of valuable historical documents. In Leningrad, the *Public Library* claims 10,000,000 volumes, and the *Library of the Academy of Sciences* some 8,000,000. There are said to be 350,000 libraries in all parts of the U.S.S.R.

In the Far East, the most extensive libraries are found in Japan, although war damage in 1944-45 was severe. In Tokyo, the *National Diet Library* (formerly the *Imperial Library*) was organized in 1948 as a deposit center. With its various branches, it contains an estimated 4,100,000 volumes. The *University Library* at Kyoto has about 1,820,000.

The oldest national libraries in South America are those of Argentina and Brazil, each founded in 1810; the former has about 600,000 volumes, the latter 1,000,000.

The United States and Canada

The earliest libraries in the colonial era were privately owned, although in 1731 Benjamin Franklin projected the first subscription library in Philadelphia. Endowments helped to set up many of the large

libraries, although many of these institutions are now receiving state or municipal support.

The largest library in the United States is the *Library of Congress*, established in 1800 by Congress. In 1957, it contained more than 11,050,000 books and pamphlets, and total collections of over 36,100,000. It extends services to members of Congress and other government departments, and also offers excellent facilities for persons engaged in scholarly research.

The *New York Public Library*, with some 6,400,000 volumes in 1957, is the largest public library in the U. S.

The *American Library Directory* for 1954 listed 12,478 libraries in the U. S., including 6,925 public (with 3,106 branches), 1,374 college and university, 1,923 special and 2,256 other types.

The growth of libraries attached to colleges and universities in the United States

has been phenomenal, and some of the university libraries are among the largest in the country. Those with more than 1,000,000 volumes each in 1956 were as follows: Harvard, 6,075,000; Yale, 4,280,000; California, including branches, 3,632,000; Illinois, 3,090,000; Michigan, 2,325,000; Columbia, 2,117,000; Chicago, 1,911,000; Minnesota, 1,791,000; Cornell, 1,746,000; Princeton, 1,500,000; Pennsylvania, 1,475,000; Stanford, 1,309,000; Texas, 1,273,000; Duke, 1,198,000; Northwestern, 1,185,000; Ohio State, 1,150,000; Johns Hopkins, 1,068,000; New York University, 1,041,000; Indiana, 1,000,000.

In Canada, the most important public library is that of Toronto, which has more than 875,000 volumes. Large Canadian university libraries include those at Queens (280,000), Toronto (609,000), McGill (720,000), and Laval (339,000). The *American Library Directory* for 1954 listed a total of 719 libraries in Canada, including 683 public.

Museums of the World

(For U. S. Museums, see page 382.)

The modern museum originated during the Renaissance, when the revival of interest in the arts and classical antiquity led princes, nobles and humanists to amass specimens of historical value and to house their collections in special buildings or galleries.

Art Museums

The *British Museum*, London, contains some of the most famous historical objects of the world, including the Elgin Marbles and the Rosetta Stone.

Victoria and Albert Museum, London, whose primary object is to furnish examples to illustrate the history of art, emphasizes architecture and sculpture, ceramics, engraving, book production, paintings, textiles, etc. The library is devoted principally to fine and applied arts of all countries.

National Gallery, London, contains a great number of old Masters, including paintings by Da Vinci, Michelangelo, Tintoretto, Mantegna, Titian, Bellini, Jan van Eyck, Rubens, Rembrandt, Holbein, Constable and Turner.

Tate Gallery, London, established as part of the National Gallery, was badly damaged during air raids of World War II, but was completely restored by 1949.

Wallace Collection, London, has many *objets d'art* and curios of French origin, and first-rank canvases and etchings of Italian, Spanish, Flemish, Dutch and English artists.

In France, the most famous gallery is the *Louvre* in Paris, noted for the magnificence of its architecture as well as for

its art collection, which is the largest in the world. Other Parisian museums of importance are *Cluny*, *Rodin*, *Guimet*, and *Carnavalet*.

Among the magnificent Italian museums, the *National Museum* at Naples contains one of the best arranged and classified collections. The *Uffizi Gallery* in Florence, founded by the Medics, has one of the world's largest and best collections of Italian art. Other galleries in Florence are the *Gallery of Modern Art* (*Pitti Palace*) and the *National Museum* (*Bargello*). Rome has numerous museums, including several in the Vatican.

In Berlin, the *National Gallery* was damaged during World War II.

The *Royal Museum of Fine Arts* in Brussels has a fine collection of French, Flemish and Dutch masters and houses many canvases by Rubens, Van Dyck, Jordans, Rembrandt, Frans Hals and Jan Steen.

The *State Museum* in Amsterdam contains superb works by Rembrandt, Vermeer and others.

Among the notable art museums in other countries are the world-famous *Museo del Prado* in Madrid; the *Tretyakov Gallery* and the *Pushkin State Museum of Fine Arts* in Moscow; the *Hermitage State Museum* in Leningrad; and the *National Museum* in Tokyo, famed for its many Oriental paintings and objects of art.

Science Museums

The *Ashmolean Museum*, oldest in Great Britain, was founded in 1683 by Oxford

University and houses a collection of archeological and classical rarities.

Science Museum of London has exhibits of scientific instruments and appliances which review the progress of science and the history of invention. Other London museums of science are the *Natural History (British Museum)*, the *Imperial War Museum* (exhibits of both World Wars) and the *Geological Museum*.

The *Liverpool Museums* contain valuable collections of natural history and antiquities and are divided into departments of zoology, botany, geology, archeology and ethnology. The buildings were almost completely destroyed during World War II, although most of the exhibits were saved.

The *Manchester Museum* serves as both a municipal and a university museum. The *Bristol Museum* contains departments of geology, zoology, botany, archeology and Bristol antiquities. The *National Museum of Wales* at Cardiff has departments of art, archeology, botany, geology and zoology.

In Edinburgh, Scotland, are the famed *Royal Scottish Museum*, which has collections in art, ethnography, natural history, technology and archeology; and the *National Museum of Antiquities of Scotland*, noted for its coin and manuscript collections.

The *National Museum* in Dublin and the *Municipal Museum* in Belfast have important science collections.

Notable institutions of continental Europe include the *Natural History Museum* in Paris, the *Museum of Oceanography* in Monaco, the *Natural History Museum* in Lisbon, the *State Museum of Geology and Mineralogy* in Leyden (Netherlands), the *Museum of Natural History* in Stock-

holm, the *Natural History Museum* in Vienna, the *Hungarian National Museum* in Budapest, the *National Museum* in Prague, and the various science museums in Berne, Geneva, Zurich and Neuchâtel, Switzerland. Most larger cities of the U.S.S.R. have science museums of varying sizes, some specializing in local exhibits of natural history.

Famous science museums in Germany prior to World War II included the various sections of the *Staatliche Museen* in Berlin (re-established after the war) and the museum of ethnography in Hamburg.

In Calcutta is the *Indian Museum*, outstanding for its marine fauna and vertebrate fossils, and in Bombay the *Victoria and Albert Museum*.

In Australia are the *Queensland Museum* and the *Botanic Museum* in Brisbane, the *South Australian Museum* in Adelaide, and the *Australian Museum* in Sydney.

New Zealand contains the *Canterbury Museum*, Christchurch, rich in local fauna, flora and geological items, and a Maori and Polynesian ethnological collection.

In Africa, the *South African Museum*, Capetown, holds general and local history collections and others illustrating anthropology, ethnology and archeology. The *Durban Museum* contains much anthropological material. In Cairo are the notable collections of the *Egyptian Museum*.

Other museums of note include the *Archeological Museums* at Istanbul, the *Tokyo Science Museum*, the *National Museum of Natural History* in Santiago (Chile), the *National Museum* at Rio de Janeiro, and the *Argentine National Museum of Natural Sciences* at Buenos Aires.

Zoological Gardens

North America has more than 30 major zoos, in the United States, Canada and Mexico. The *Quebec Zoological Society's* collection is made up of Canadian species; Toronto has many exotic species.

The first zoological garden in the United States was established in Philadelphia in 1874. Since that time nearly every large city in the country has acquired a zoo. Among the largest are the celebrated *Bronx Zoo* and the *Central Park Zoo* in New York, the *Lincoln Park Zoo* and the *Brookfield Zoo* in Chicago, and those in St. Louis, Cincinnati, Detroit, Kansas City and San Diego. The *National Zoological Park* in Washington, D. C., in a beautiful setting of hills, woods and streams, was established in 1890 by an act of Congress. Some of the U. S. zoos exhibit their collections in open-air, barless pits; the Brookfield Zoo is an example.

In Europe, zoological gardens have long been popular public institutions. The *Jardin d'Acclimatation*, in the Bois de Boulogne, Paris, was established in 1858, and a model zoo at Vincennes was added in 1937 for the Paris Exposition.

Germany had about 20 zoological gardens, many of which were developed in the peacetime years between World Wars I and II. Large zoos were located in Berlin and Frankfurt am Main. In Munich, the animals were grouped according to the continent of their origin. Others were established at Dresden, Leipzig and Cologne. At Stellingen, the *Hagenbeck Garden* became an outstanding show place and distributing center for animals. Smaller collections were established at Düsseldorf, Elberfeld and Hanover. Several German zoos, notably that at Berlin, were destroyed during World War II.

The *Schönbrunn* at Vienna is one of the oldest zoos in Europe. The Budapest zoological gardens house a fine collection of European birds. At Antwerp, the *Royal Zoological Society* founded a large menagerie in 1843. It was seriously damaged by German bombs during World War II.

In the British Isles, the outstanding collection is in the garden of the *London Zoological Society* in Regent's Park. Although this zoo received a number of direct bomb hits in 1940-41 and again in 1944, it remained open throughout World War II; visitors during this period numbered 6,500,000. Manchester and Clifton have smaller gardens, and the one at Edinburgh is famous for its collection of pen-

guins. The *Dublin Zoo* is noted for its lions, many of which were born there.

The Amsterdam zoo, with its East Indian collection and its aquarium, and the Rotterdam gardens are the two best known in the Netherlands. Built on a high elevation, the *Skansen Zoo* in Stockholm exhibits its north European specimens. The most important gardens in the U.S.S.R. are found in Moscow, where northern as well as exotic species are collected. The zoo at Rome has part of its collection confined in barless pits. At Lisbon there is a small zoological garden, and in Madrid a part of the original royal menagerie. A new zoo notable for its landscaping was opened at Naples, Italy, in 1952.

Famous Structures

(See also Seven Wonders of the World on page 729.)

Ancient

The Great Sphinx of Egypt, one of the wonders of ancient Egyptian architecture, adjoins the pyramids of Giza and has a length of 189 ft. It was built in the 4th dynasty and was used as a temple.

Other Egyptian buildings of note include the *Temples of Karnak and Edfu* and the *Tombs at Beni Hassan*.

The Parthenon of Greece, built on the Acropolis in Athens, was the chief temple to the goddess Athena. It was believed to have been completed by 438 B.C. The present temple remained intact until the 5th century A.D. Today, though the Parthenon is in ruins, its majestic proportions are still discernible.

Other great structures of ancient Greece were the *Temples at Paestum* (about 540 and 420 B.C.); the *Temple of Poseidon* (about 460 B.C.); the *Temple of Apollo* at Corinth (about 540 B.C.); the *Temple of Apollo* at Bassae (about 450-420 B.C.); the famous *Erechtheum* atop the Acropolis (about 421-405 B.C.); the *Temple of Athena Nike* at Athens (about 426 B.C.); the *Olympieum* at Athens (174 B.C.-A.D. 131); the *Athenian Treasury* at Delphi (about 515 B.C.); the *Propylaea* of the Acropolis at Athens (437-432 B.C.); the *Theater of Dionysus* at Athens (about 350-325 B.C.); the "*House of Cleopatra*" at Delos (138 B.C.) and the *Theater* at Epidauros (about 325 B.C.).

The Colosseum (Flavian Amphitheater) of Rome, the largest and most famous of the Roman amphitheaters, was opened for use A.D. 80. Elliptical in shape, it consisted of three stories and an upper gallery, rebuilt in stone in its present form in the third century A.D. Its seats rise in tiers, which in turn are buttressed by concrete vaults and stone piers. It could seat between 40,000 and 50,000 spectators. The

Colosseum was principally used for gladiatorial combat.

The Pantheon at Rome, begun by Agrippa in 27 B.C. as a temple, was rebuilt in its present circular form by Hadrian (A.D. 110-25). Literally the Pantheon was intended as a temple of "all the gods." It is remarkable for its perfect preservation today, and it has served continuously for 20 centuries as a place of worship.

Famous Roman arches include the *Arch of Constantine* (about A.D. 315) and the *Arch of Titus* (about A.D. 80).

Later European

St. Mark's Cathedral in Venice (1063-67), one of the great examples of Byzantine architecture, was begun in the 9th century. Partly destroyed by fire in 976, it was later rebuilt as a Byzantine edifice.

Other famous Byzantine examples of architecture are *St. Sophia* in Constantinople (A.D. 532-37); *San Vitale* in Ravenna (542); *St. Paul's Outside the Walls*, Rome (5th century); the *Kremlin* baptism and marriage church, Moscow (begun in 1397); and *St. Lorenzo Outside the Walls*, Rome, begun in 588.

The Cathedral Group at Pisa (1067-1173), one of the most celebrated groups of structures built in Romanesque style, consists of the cathedral, the cathedral's baptistery, and the *Leaning Tower*. This trio forms a group by itself in the northwest corner of the city. The cathedral and baptistery are built in black and white marble. The campanile (Leaning Tower) is 179 ft. high and leans more than 16 feet out of the perpendicular. There is little reason to believe that the architects intended to have the tower lean.

Other examples of Romanesque architecture include the *Vézelay Abbey* in France (1130); the *Church of Notre-Dame-*

du-Port at Clermont-Ferrand in France (1100); the *Church of San Zeno* (begun in 1138) at Verona, and *Durham Cathedral* in England.

The *Alhambra* (1248-1354), located in Granada, Spain, is universally esteemed as one of the greatest masterpieces of Moslem architecture. Designed as a palace and fortress for the Moorish monarchs of Granada, it is surrounded by a heavily fortified wall more than a mile in perimeter. The location of the Alhambra in the Sierra Nevada provides a magnificent setting for this jewel of Moorish Spain.

The *Tower of London* is a group of buildings and towers covering 13 acres along the north bank of the Thames. The central *White Tower*, begun in 1078 during the reign of William the Conqueror, was originally a fortress and royal residence, but was later used as a prison. The *Bloody Tower* is associated with Anne Boleyn and other notables.

Westminster Abbey, in London, was begun in 1045 and completed in 1065. It was rebuilt and enlarged in 1245-50.

Notre-Dame de Paris (begun in 1163), one of the great examples of Gothic architecture, is a twin-towered church with a steeple over the crossing and immense flying buttresses supporting the masonry at the rear of the church.

Other famous Gothic structures are *Chartres Cathedral* (12th century); *Sainte Chapelle*, Paris (1246-48); *Laon Cathedral*, France (1160-1205); *Rheims Cathedral* (about 1210-50; rebuilt after its almost complete destruction in World War I); *Rouen Cathedral* (13th-16th centuries); *Amiens Cathedral* (1218-69); *Beauvais Cathedral* (begun 1247); *Salisbury Cathedral* (1220-60); *York Minster* or the *Cathedral of St. Peter* (begun in the 7th century); *Milan Cathedral* (begun 1386); and *Cologne Cathedral* (13th-19th centuries; badly damaged in World War II).

The *Duomo* (cathedral) in Florence was founded in 1298, completed by Brunelleschi and consecrated in 1436. The oval-shaped dome dominates the entire structure.

The *Vatican* is a group of buildings in Rome comprising the official residence of the Pope. The *Basilica of St. Peter*, the largest church in the Christian world, was begun in 1450. The *Sistine Chapel*, begun in 1473, is noted for the art masterpieces of Michelangelo, Botticelli and others. The *Basilica of the Savior* (known as *St. John Lateran*) is the first-ranking Catholic Church in the world, for it is the cathedral of the Pope.

Other examples of Renaissance architecture are the *Palazzo Riccardi*, the *Palazzo Pitti* and the *Palazzo Strozzi* in Florence; the *Farnese Palace* in Rome; *Palazzo Grimani* (completed about 1550) in Venice;

the *Escorial* (1563-93) near Madrid; the *Town Hall* of Seville (1527-32); the *Louvre*, Paris; the *Château* at Blois, France; *St. Paul's Cathedral*, London (1675-1710; badly damaged in World War II); the *Ecole Militaire*, Paris (1752); the *Pazzi Chapel*, Florence, designed by Brunelleschi (1429); the *Palace of Fontainebleau* and the *Château de Chambord* in France.

The *Palace of Versailles*, containing the famous Hall of Mirrors, was built during the reign of Louis XIV and served as the royal palace until 1793.

Outstanding European buildings of the 18th and 19th centuries are the *Superga* at Turin, the *Hôtel-Dieu* in Lyon, the *Belvedere Palace* at Vienna, the *Royal Palace* of Stockholm, the *Opera House* of Paris (1863-75); the *Bank of England*, the *British Museum*, the *University of London* and the *Houses of Parliament*, all in London; the *Panthéon*, the *Church of the Madeleine*, the *Bourse* and the *Palais de Justice* in Paris.

The *Eiffel Tower*, in Paris, was built for the Exposition of 1889 by Alexandre Eiffel. It is 984 ft. high.

Asiatic and African

The *Taj Mahal* (1632-50), at Agra, India, built by Shah Jahan as a tomb for his wife, is considered by some as the most perfect example of the Mogul style and by others as the most beautiful building in the world. Four slim white minarets flank the building, which is topped by a white dome; the entire structure is of marble.

Other examples of Indian architecture are the temples at Benares and Tanjore.

Among famed Moslem edifices are the *Dome of the Rock* or *Mosque of Omar*, Jerusalem (A.D. 691); the *Citadel* (1166), and the *Tombs of the Mamelukes* (15th century), in Cairo; the *Tomb of Humayun* in Delhi; the *Blue Mosque* (1468) at Tabriz and the *Tamerlane Mausoleum* at Samarkand.

Angkor Vat, outside the city of Angkor Thom, Cambodia, is one of the most beautiful examples of Cambodian or Khmer architecture. The sanctuary was built during the 12th century.

Great Wall of China (228 B.C.?), designed specifically as a defense against nomadic tribes, has numerous large watch towers which could be called buildings. It was erected by Emperor Ch'in Shih Huang Ti and is 1,400 miles long. Built mainly of earth and stone, it varies in height between 18 and 30 feet.

Typical of Chinese architecture are the pagodas or temple towers. Among some of the better known pagodas are the *Great Pagoda of the Wild Geese* at Sian (founded in 652); *Nan t'a* (11th century) at Fang Shan; the *Pagoda of Sung Yueh Ssu* (A.D. 523) at Sung Shan, Honan.

Other well-known Chinese buildings are the *Drum Tower* (1273), the *Three Great Halls* in the Purple Forbidden City (1627), *Buddha's Perfume Tower* (19th century), the *Porcelain Pagoda* and the *Summer Palace*, all at Peiping.

United States

Rockefeller Center, from 5th to 6th Aves. and from 48th to 51st Sts. in New York City, occupies 12½ acres and contains 15 buildings, the highest being the 70-story *RCA Building*.

Grant's Tomb, at Riverside Dr. near 122nd St. in New York City, contains the bodies of Ulysses S. Grant and his wife. It was completed in 1897.

The Cathedral of St. John the Divine, at Cathedral Pkwy. and Amsterdam Ave. in New York City, was begun in 1892 but

is not yet completed. When completed, it will be the largest Gothic cathedral in the world: 601 ft. long, 146 ft. wide at the nave, 320 ft. wide at the transept.

St. Patrick's Cathedral, at 5th Ave. and 50th St. in New York City, has a seating capacity of 4,500. The nave was opened in 1877; the cathedral was dedicated in 1879.

Lincoln Memorial, in Washington, D. C., was dedicated in 1922. It has 36 columns (the number of states in 1865), each 44 ft. high. The main chamber contains a statue of Lincoln.

Independence Hall, in Philadelphia, was the scene of the signing of the Declaration of Independence and the drawing up of the U. S. Constitution. It was built between 1732-41 as the State House. The Liberty Bell is on the first floor.

Great Dams of the World

Reservoir capacity, thousands of acre feet	Name	Location	Maximum height, feet	Date completed
31,142	Hoover	Colorado River, Ariz.-Nev.	726	1936
24,500	Garrison	Missouri River, N. Dak.	210	1954
19,600	Oahe	Missouri River, S. Dak.	230	*
19,412	Fort Peck	Missouri River, Mont.	250	1940
9,517	Grand Coulee	Columbia River, Wash.	550	1942
6,200	Fort Randall	Missouri River, S. Dak.	150	1954
6,100	Kentucky	Tennessee River, Ky.	160	1944
6,089	Wolf Creek	Cumberland River, Ky.	242	1951
6,000	Hirakud	Mahandi River, India	180	*
5,825	Denison	Red River, Okla.-Tex.	165	1944
5,407	Bull Shoals	White River, Ark.	278	1953
5,000	Presidente Alemán	Rio Tonto, Mex.	200	1955
4,500	Shasta	Sacramento River, Calif.	602	1945
4,407	Gatun	Chagres River, Panama Canal Zone	115	1912
4,085	Falcon	Rio Grande, Tex.-Mex.	128	1953
4,060	Aswan	Nile River, Egypt	174	1934
3,500	Hungry Horse	Flathead, S. Fk., Mont.	520	1953
3,263	Lázaro Cárdenas (El Palmito)	Nazas River, Mex.	295	1948
3,000	Salt Springs	North Fork, Mokelumne River, Calif.	345	1931
2,808	Kerr	Roanoke River, Va.	144	1951
2,600	Tungabhadra	Kistna River, India	160	1954
2,567	Norris	Clinch River, Tenn.	265	1936
2,432	Alvaro Obregón (Oviachic)	Yaqui River, Sonora, Mex.	187	1953
2,300	Saluda	Saluda River, S. C.	208	1930
2,219	Elephant Butte	Rio Grande, N. Mex.	301	1916
2,150	Mettur	Cauvery River, India	214	1934
2,092	Center Hill	Caney Fork River, Tenn.	240	1950
2,092	Canyon Ferry	Missouri River, Mont.	225	1953
2,000	Hume	Murray River, Australia	180	1936
2,000	Kingsley	North Platte River, Nebr.	162	1941
1,997	Osage (Bagnell)	Osage River, Mo.	148	1931
1,983	Norfolk	North Fork River, Ark.	230	1944
1,980	Chelsea	Gatineau River, Canada	100	1927
1,975	Pensacola	Grand River, Okla.	152	1940
1,934	Marshall Ford (Mansfield)	Colorado River, Tex.	270	1942
1,820	Davis	Colorado River, Ariz.-Nev.	200	1949
1,706	Dale Hollow	Obey River, Tenn.-Ky.	183	1943

* Under construction in 1956

Notable Modern Bridges

Length of channel span, feet	Name	Location	Type*	Year completed
4,200	GOLDEN GATE	San Francisco	S	1937
3,800	MACKINAC STRAITS	Michigan	S	1957
3,500	GEORGE WASHINGTON	New York City	S	1931
2,800	TACOMA NARROWS	Tacoma, Wash.	S	1950
2,310	TRANSBAY	San Francisco	S	1936
2,300	BRONX-WHITESTONE	New York City	S	1939
2,150	DELAWARE MEMORIAL	Near Wilmington, Del.	S	1951
2,000	WALT WHITMAN	South Philadelphia, Pa.	S	1957
1,850	AMBASSADOR	Detroit, Mich.	S	1929
1,800	QUEBEC	Near Quebec, Canada	C	1917
1,750	DELAWARE RIVER	Philadelphia, Pa.	S	1926
1,700	FORTH	Firth of Forth, Scotland	C	1889
1,652	KILL VAN KULL	Bayonne, N. J.	SA	1931
1,650	SYDNEY HARBOR	Sydney, Australia	SA	1932
1,632	BEAR MOUNTAIN	Peekskill, N. Y.	S	1924
1,600	CHESAPEAKE BAY	Near Annapolis, Md.	S	1952
1,600	WILLIAMSBURG	New York City	S	1903
1,595.5	BROOKLYN	New York City	S	1883
1,550	LIONS GATE	Vancouver, Canada	S	1939
1,500	MID-HUDSON	Poughkeepsie, N. Y.	S	1930
1,500	HOWRAH	Calcutta, India	C	1943
1,470	MANHATTAN	New York City	S	1909
1,447	ANGUS L. MACDONALD	Halifax, N. S., Canada	S	1954
1,400	TRANSBAY	Oakland, Calif.	C	1936
1,380	TRIBOROUGH	New York City	S	1936
1,240	COLOGNE-RODENKIRCHEN	Germany	S	1954
1,212	TAPPAN ZEE	Nyack, N. Y.	C	1956
1,207	ST. JOHNS	Portland, Oreg.	S	1931
1,200	LONGVIEW	Longview, Wash.	C	1930
1,200	MT. HOPE	Near Bristol, R. I.	S	1929
1,182	QUEENSBORO	New York City	C	1909
1,114	FLORIANÓPOLIS	Florianópolis, Brazil	S	1926
1,100	CARQUINEZ STRAIT	Near San Francisco	C	1927
1,097	MONTREAL HARBOR	Montreal, Canada	C	1930
1,080	DEER ISLE	Deer Isle, Me.	S	1939
1,070	RICHMOND-SAN RAFAEL	San Francisco Bay	C	1956
1,057	CINCINNATI	Cincinnati, Ohio	S	1867
1,050	COOPER RIVER	Charleston, S. C.	C	1929
1,042	NAGASAKI	Japan	SA	1955
1,034	COLOGNE-MÜLHEIM	Germany	S	1951
1,010	WHEELING	Wheeling, W. Va.	S	1849
977.5	HELL GATE	New York City	SA	1917
963	EAST ST. LOUIS	East St. Louis, Ill.	C	1950
950	RAINBOW	Niagara Falls, N. Y.	SA	1941
949	GRAND MERE	Quebec, Canada	S	1928
936	DUISBURG	Germany	S	1954
930	PEACE RIVER	Alaska Highway	S	1943
924	STORY	Queensland, Australia	C	1940
875	NATCHEZ	Natchez, Miss.	C	1940
871	BLUE WATER	Port Huron, Mich.	C	1938
866	SANDO	Sando, Sweden	CA	1943
864	SUNSHINE SKYWAY	St. Petersburg, Fla.	C	1954
856	SAVA RIVER	Belgrade, Yugoslavia	CG	1956
845	DUBUQUE	Dubuque, Iowa	CT	1943
800	KINGSTON-RHINECLIFF	Hudson River, N. Y.	CT	1956
800	THOUSAND ISLANDS	Alexandria Bay, N. Y.	S	1938
800	RIP VAN WINKLE	Catskill, N. Y.	C	1935
800	HENRY HUDSON	New York City	SA	1936

* C—Cantilever. S—Suspension. SA—Steel Arch. CA—Concrete Arch. CT—Continuous Truss. CG—Con-
tinuous Girder.

Area and Population by Country

Country	Area, sq. mi.	Population	Year ¹	Country	Area, sq. mi.	Population	Year ¹
Afghanistan.....	250,966	13,000,000	1953E	Lebanon.....	4,015	1,450,000	1954E
Albania.....	11,100	1,394,310	1955C	Liberia.....	43,000	1,250,000	1955E
Argentina.....	1,084,359	19,470,000	1956E	Libya.....	679,358	1,091,830	1954C ¹
Australia.....	2,974,581	9,427,558	1956E	Liechtenstein.....	61	14,861	1955C
Austria.....	32,374	6,974,000	1955E	Lithuania ²	31,200	2,700,000	1956E
Belgium.....	11,779	8,951,443	1956E	Luxemburg.....	999	312,500	1956E
Bhutan.....	19,305	623,000	1955E	Maldiv Islands.....	115	89,000	1955E
Bolivia.....	424,162	3,198,139	1955E	Mexico.....	760,373	30,538,000	1956E
Brazil.....	3,287,195	60,080,341	1956E	Monaco.....	0.59	20,422	1956C
Bulgaria.....	42,796	7,350,000	1954E	Mongolian People's Rep.....	614,350	1,000,000	1956E
Burma.....	261,757	19,856,000	1956E	Morocco.....	174,553	9,700,000	...E
Cambodia.....	67,568	4,358,000	1956E	Nepal.....	54,510	8,431,537	1954C
Canada.....	3,619,616	16,420,000	1957E	Netherlands.....	12,482	10,957,040	1957E
Ceylon.....	25,332	8,929,000	1956E	New Zealand.....	103,740	2,172,350	1956C ¹¹
Chile.....	286,396	6,941,000	1956E	Nicaragua.....	57,143	1,282,000	1956E
China ²	3,911,209	590,194,715	1953C	Norway.....	125,064	3,478,000	1956E
Colombia.....	439,519	12,939,000	1956E	Pakistan.....	364,737	83,603,000	1956E
Costa Rica.....	19,695	1,014,170	1956E	Panama.....	28,753	934,000	1956E
Cuba.....	44,217	5,829,029	1953C	Paraguay.....	157,047	1,601,000	1956E
Czechoslovakia.....	49,354	13,224,000	1956E	Peru.....	482,258	9,651,000	1956E
Denmark.....	16,577	4,475,000	1957E	Philippines.....	114,830	22,056,100	1956E
Dominican Republic.....	18,703	2,608,000	1956E	Poland.....	120,442	27,680,000	1956E
Ecuador.....	105,743	3,777,000	1956E	Portugal.....	35,358	8,837,000	1956E
Egypt.....	386,100	23,410,000	1956E	Rumania.....	91,654	17,489,794	1956C ¹¹
Estonia ²	17,400	1,100,000	1956E	Saar.....	991	996,000	1955E
Ethiopia ²	457,142	16,000,000	1954E	Salvador, El.....	8,260	2,268,464	1956E
Finland.....	130,119	4,314,000	1957E	San Marino.....	38	14,000	1955E
France.....	212,736	43,787,000	1957E	Saudi Arabia.....	617,760	7,000,000	1952E
Germany (east) ²	41,380	16,500,000	1955E	Spain.....	194,945	29,130,499	1956E
Germany (west) ²	94,719	50,595,000	1956E	Sudan.....	967,500	10,209,703	1956C
Greece ²	51,182	8,031,000	1956E	Sweden.....	173,564	7,341,122	1956E
Guatemala.....	42,042	3,349,000	1956E	Switzerland.....	15,941	5,074,000	1956E
Haiti.....	10,748	3,305,000	1955E	Syria.....	70,014	4,025,165	1956E
Honduras.....	43,277	1,711,000	1956E	Thailand.....	198,270	20,686,000	1956E
Hungary.....	35,905	9,808,000	1955E	Tibet.....	469,143	1,273,969	1953C
Iceland.....	39,768	162,391	1956E	Tunisia.....	48,332	3,782,480	1956C ¹¹
India ²	1,269,640	381,690,000	1955E	Turkey.....	296,185	24,797,000	1956E
Indonesia ²	575,893	84,654,320	1956E	Union of So. Africa ¹²	472,733	13,915,000	1956E
Iran.....	636,293	21,146,000	1955E	U.S.S.R.....	8,602,700	200,200,000	1956E
Iraq.....	171,599 ¹⁰	5,200,000	1955E	United Kingdom.....	93,599	51,209,000	1956E
Ireland.....	26,601	2,894,822	1956C ¹¹	United States.....	2,974,726	167,440,000	1956E
Israel.....	7,984	1,872,390 ¹¹	1956E	Uruguay.....	68,369	2,800,924	1954E
Italy.....	116,316	48,324,000	1956E	Vatican City State.....	(¹⁴)	947	1952E
Japan.....	142,801	90,017,000	1956E	Venezuela.....	352,143	6,000,000 ¹⁵	1955E
Jordan ¹²	37,264	1,471,000	1956E	Vietnam (north).....	63,360	12,500,000	1955E
Korea.....	85,266	28,600,000	1955E	Vietnam (south).....	65,726	12,366,000	1956E
Laos.....	91,500	1,425,000	1955E	Yemen.....	75,290	4,500,000	1953E
Latvia ²	24,600	2,000,000	1956E	Yugoslavia.....	98,700	17,799,000	1956E

¹ E—Estimated; C—Census. ² Including Formosa (Taiwan), Manchuria and Tibet. ³ Actually Russian S.S.R. but still recognized by U.S. as independent country. ⁴ Excluding Eritrea. ⁵ Excluding east Berlin. ⁶ Excluding west Berlin. ⁷ Including Dodecanese. ⁸ Excluding Kashmir. ⁹ Excluding Netherlands New Guinea. ¹⁰ Including desert area of 80,533 sq. mi. ¹¹ Preliminary figure. ¹² Including Arab Palestine. ¹³ Excluding South-West Africa. ¹⁴ 108.7 acres. ¹⁵ Excluding tribal Indians.

National Holidays of American Countries

Argentina: Independence Day, July 9.
 Bolivia: Independence Day, Aug. 6.
 Brazil: Independence Day, Sept. 7.
 Canada: Dominion Day, July 1.
 Chile: Independence Day, Sept. 18.
 Colombia: Independence Day, July 20.
 Costa Rica: Independence Day, Sept. 15.
 Cuba: Independence Day, May 20.
 Dominican Republic: Independence Day, Feb. 27.
 Ecuador: Independence Day, Aug. 10.

El Salvador: Independence Day, Sept. 15.
 Guatemala: Independence Day, Sept. 15.
 Haiti: Independence Day, Jan. 1.
 Honduras: Independence Day, Sept. 15.
 Mexico: Independence Day, Sept. 16.
 Nicaragua: Independence Day, Sept. 15.
 Panamá: Independence Day, Nov. 3.
 Paraguay: Independence Day, May 14.
 Peru: Independence Day, July 28.
 Uruguay: Independence Day, Aug. 25.
 Venezuela: Independence Day, July 5.

Largest Cities of the World

(Exact rating of the cities of the world according to size is impossible because of the diversity of the years for which census or estimated population figures have been issued. Therefore, the rating shown in this table must be considered only approximate.)

City and country	Population	Year*	City and country	Population	Year*
1. London (Greater), England	8,346,137	1951C	11. Leningrad, U.S.S.R.	2,814,000	1956E
2. New York, N. Y., U.S.A.	7,891,957	1950C	12. Peking, China	2,768,149	1953C
3. Tokyo, Japan	6,966,499	1955C†	13. Rio de Janeiro, Brazil	2,725,274	1955E
4. Shanghai, China	6,204,417	1953C	14. Tientsin, China	2,693,831	1953C
5. Moscow, U.S.S.R.	4,389,000	1956E	15. Calcutta, India	2,548,677	1951C
6. Chicago, Ill., U.S.A.	3,620,962	1950C	16. Osaka, Japan	2,547,321	1955C†
7. Buenos Aires, Argentina	3,555,000	1955E	17. São Paulo, Brazil	2,500,000	1953E
8. Berlin, Germany	3,300,000	1955E	18. Cairo, Egypt	2,367,900	1952E
9. Paris, France	2,850,189	1954C	19. Mexico City, Mexico	2,234,795	1950C
10. Bombay, India	2,839,270	1951C	20. Los Angeles, Calif., U.S.A.	2,104,663	1953C†

Other Large Foreign Cities (over 560,000)

City and country	Population	Year*	City and country	Population	Year*
Ahmedabad, India	788,333	1951C	Liverpool, England	789,532	1951C
Alexandria, Egypt	1,070,000	1952E	Lodz, Poland	670,000	1955E
Amsterdam, Netherlands	871,188	1957E	Madras, India	1,416,056	1951C
Antwerp, Belgium	611,035	1956E	Madrid, Spain	1,843,705	1956E
Athens, Greece	565,084	1951C	Manchester, England	703,175	1951C
Baku, U.S.S.R.	901,000	1956E	Manila, Philippines	1,158,260	1952E
Bandung, Indonesia	870,346	1956E	Marseilles, France	661,492	1954C
Bangalore, India	778,977	1951C	Melbourne, Australia	1,595,300	1956E
Bangkok, Thailand	620,830	1947C	Milan, Italy	1,264,402	1951C
Barcelona, Spain	1,403,028	1956E	Montevideo, Uruguay	810,969	1954E
Birmingham, England	1,112,340	1951C	Montreal, Canada	1,094,448	1956C
Bogota, Colombia	765,360	1954E	Mukden, Manchuria	1,790,000	1952E
Brussels, Belgium	985,793	1956E	Munich, Germany	870,000	1953E
Bucharest, Rumania	1,236,906	1956C†	Nagoya, Japan	1,336,779	1955C†
Budapest, Hungary	1,781,085	1954E	Nanking, China	1,020,000	1952E
Canton, China	1,210,000	1952E	Naples, Italy	1,003,815	1951C
Capetown, South Africa	687,900	1956E	Novosibirsk, U.S.S.R.	731,000	1956E
Caracas, Venezuela	749,303	1956E	Port Arthur, Kwantung	1,010,000	1952E
Casablanca, Morocco	682,388	1952C	Prague, Czechoslovakia	932,024	1948E
Chungking, China	2,000,000	1952E	Pusan, Korea	840,000	1955E
Cologne, Germany	629,200	1953E	Rangoon, Burma	711,520	1953C†
Copenhagen, Denmark	950,700	1956E	Recife, Brazil	560,000	1953E
Delhi, India	914,973	1951C	Riga, Latvia	565,000	1956E
Durban, U. of So. Af.	591,300	1956E	Rome, Italy	1,606,739	1951C
Essen, Germany	624,100	1953E	Rotterdam, Netherlands	722,718	1957E
Frankfurt am Main, Germany	564,400	1953E	Saigon-Cholon, Vietnam	1,794,360	1956E
Genoa, Italy	678,200	1951C	Santiago, Chile	1,348,283	1952C
Glasgow, Scotland	1,089,555	1951C	Seoul, Korea	1,300,000	1955E
Gorki, U.S.S.R.	876,000	1956E	Sian, China	628,499	1948C
Hague, The, Netherlands	606,728	1957E	Sofia, Bulgaria	600,000	1953E
Hamburg, Germany	1,658,000	1953E	Stallino, U.S.S.R.	625,000	1956E
Harbin, Manchuria	1,000,000	1952E	Stockholm, Sweden	794,113	1956E
Havana, Cuba	785,455	1953C	Surabaya, Indonesia	980,905	1956E
Hyderabad, India	1,085,722	1951C	Sverdlovsk, U.S.S.R.	707,000	1956E
Istanbul, Turkey	1,214,616	1955C†	Sydney, Australia	1,935,880	1956E
Jakarta, Indonesia	1,927,785	1956E	Taipei, Formosa	677,159	1955E
Johannesburg, U. of So. Af.	1,006,500	1956E	Tashkent, U.S.S.R.	778,000	1956E
Kanpur, India	705,383	1951C	Tblisi, U.S.S.R.	635,000	1956E
Karachi, Pakistan	1,126,417	1951C	Teheran, Iran	618,976	1950E
Kharkov, U.S.S.R.	877,000	1956E	Toronto, Canada	662,096	1956C
Kiev, U.S.S.R.	991,000	1956E	Tsingtao, China	850,308	1948E
Kobe, Japan	765,435	1950C	Turin, Italy	711,492	1951C
Kuybyshev, U.S.S.R.	760,000	1956E	Victoria, Hong Kong	1,000,000	.....
Kyoto, Japan	1,204,017	1955C†	Vienna, Austria	1,766,102	1951C
Lahore, Pakistan	849,476	1951C	Warsaw, Poland	965,000	1955E
Leipzig, Germany	607,700	1953E	Wuhan, China	1,090,000	1952E
Lima, Peru	926,400	1952E	Yokohama, Japan	1,143,287	1955C†
Lisbon, Portugal	783,226	1950C			

* E—Estimated; C—Census. † Preliminary figures. ‡ Special census conducted under direction of U. S. Bureau of Census, at city expense. § Including suburbs.

Great Disasters

Earthquakes and Volcanic Eruptions

- A.D. 79** Aug. 24, ITALY: eruption of Mt. Vesuvius buried cities of Pompeii and Herculaneum, killing thousands.
- 1755** Nov. 1, PORTUGAL: one of the most severe of recorded earthquakes leveled Lisbon and was felt as far away as southern France and North Africa; between 10,000 and 20,000 killed in Lisbon alone.
- 1883** Aug. 26-28, NETHERLANDS INDIES: eruption of Krakatoa; violent explosions destroyed two-thirds of island. Sea waves occurred as far away as Cape Horn, and possibly England. Estimated 36,000 dead.
- 1902** May 8, MARTINIQUE, WEST INDIES: Mt. Pelée erupted and wiped out city of St. Pierre; 40,000 dead.
- 1906** April 18, SAN FRANCISCO: earthquake accompanied by fire razed more than 4 sq. mi.; more than 500 dead or missing; property damage about 250-300 millions.
- 1908** Dec. 28, MESSINA, SICILY: about 85,000 killed and city totally destroyed by one of most disastrous of recorded earthquakes.
- 1923** Sept. 1, JAPAN: earthquake destroyed third of Tokyo and most of Yokohama; more than 90,000 persons were killed.
- 1935** May 31, INDIA: earthquake at Quetta killed an estimated 50,000.
- 1939** Jan. 24, CHILE: earthquake razed some 50,000 sq. mi.; 30,000 persons killed.
- 1939** Dec. 27, NORTHERN TURKEY: severe quakes destroyed city of Erzingan; about 100,000 casualties.
- 1949** Aug. 5, ECUADOR: earthquake killed about 6,000 and razed 50 towns.
- 1950** Aug. 15, INDIA: second heaviest earthquake on record affected 30,000 sq. mi. in Assam; 20,000-30,000 believed killed.
- 1951** Jan. 18-21, PAPUA TERRITORY, NEW GUINEA: eruption of Mt. Lamington killed more than 3,000.
- 1954** Sept. 9, ALGERIA: about 1,500 reported dead in Northern Algerian earthquake.
- 1956** June 17, AFGHANISTAN: about 2,000 persons were killed during 10-day series of earthquakes in vicinity of Kabul.
- 1957** July 2, NORTHERN IRAN: 1,564 reported dead in earthquake.
- 1957** July 28, MEXICO: about 60 dead in quakes centering in Mexico City and vicinity of Acapulco.

Floods, Avalanches and Tidal Waves

WORLD

- 1228** HOLLAND: 100,000 persons reputedly drowned by sea flood in Friesland section.
- 1642** CHINA: rebels besieging Kaifeng destroyed seawall, causing flood that drowned 300,000 inhabitants.
- 1887** CHINA: hundreds of thousands of lives were reputedly lost in Honan province in overflow of Hwang Ho River.
- 1896** JAPAN: earthquake and tidal wave at Sanriku killed 27,000.
- 1939** CHINA: floods in north; casualties estimated at 10,000,000 homeless, starved or drowned.
- 1946** ALASKA-HAWAII: series of tidal waves in Pacific originating off Alaska killed about 150 in Hawaii.
- 1947** JAPAN: floods in wake of typhoon killed about 2,000 persons on Honshu Island.
- 1948** TURKEY: hundreds of persons were drowned when two rivers in southern Turkey burst their dikes.
- 1948** CHINA: about 1,000 reported dead in floods near Foochow.
- 1950** CHINA: floods in eastern and southern China left 1,000,000 homeless and killed 500.
- 1951** ALPS: snow avalanches killed more than 200 in Alpine regions of Switzerland, Italy, France and Austria.
- 1951** MANCHURIA: floods killed 1,800; 3,000 missing.
- 1953** NORTHWEST EUROPE: storm followed by floods devastated North Sea coastal areas. Netherlands was hardest hit, with 1,794 dead.
- 1954** IRAN: flash flood reportedly killed 2,000 religious pilgrims.
- 1955** INDIA: floods in Punjab, Patiala and at Delhi reported to have killed 1,700.
- 1956** CHINA: floods in three provinces following typhoon killed more than 2,000.

UNITED STATES

- 1889** PENNSYLVANIA: more than 2,000 died in Johnstown flood.
- 1913** OHIO AND INDIANA: floods of Ohio and Indiana rivers took 730 lives.

- 1927 **MISSISSIPPI VALLEY:** floods inundated 20,000 sq. mi.; 700,000 were left homeless.
- 1937 **MISSISSIPPI AND TRIBUTARY VALLEYS:** floods in the Allegheny, Mississippi, Ohio valleys killed hundreds.

- 1954 **TEXAS-MEXICO BORDER:** flood of the Rio Grande river killed 50 or more persons.
- 1955 **NORTHERN CALIFORNIA, OREGON:** week of rains caused \$150,000,000 damage, 74 deaths.

Tornadoes, Typhoons and Hurricanes

(For tornadoes and hurricanes in the U. S., see Pages 362-64.)

WORLD

- 1864 Oct. 5, **INDIA:** most of Calcutta denuded by cyclone; 70,000 killed.
- 1876 Oct. 31, **INDIA:** cyclone, tidal wave swept 3,000 sq. mi.; 215,000 killed.
- 1882 June 6, **INDIA:** cyclone and tidal wave killed 100,000 in Bombay.
- 1906 **CHINA:** typhoon at Hong Kong killed about 10,000.
- 1930 Sept. 3, **SANTO DOMINGO** (now Ciudad Trujillo): hurricane killed about 2,000 and injured 6,000.
- 1934 Sept. 21, **JAPAN:** hurricane killed more than 4,000 on Honshu.
- 1935 Oct. 25, **HAITI:** hurricane, flood killed 2,000 in Jérémie and Jacmel.

- 1942 Oct. 16, **INDIA:** cyclone devastated Bengal; about 40,000 lives lost.
- 1949 Oct. 27, **INDIA:** cyclone along southeastern coast killed about 1,000.
- 1949 Oct. 31-Nov. 2, **PHILIPPINES:** 1,000 persons believed dead following typhoon.
- 1952 Oct. 20-22, **INDO-CHINA, PHILIPPINES:** typhoons killed more than 1,000 persons.
- 1953 Sept. 25, **VIET-NAM:** typhoon left about 1,000 dead.
- 1954 Sept. 26, **JAPAN:** typhoon off Hakodate killed 1,200-1,600.
- 1955 Sept. 19, **MEXICO:** Hurricane Hilda killed over 200 in Tampico area.

Fires and Explosions

WORLD

- 1666 Sept. 2, **ENGLAND:** "Great Fire of London" destroyed 13,200 houses, St. Paul's Church, 86 parish churches, etc. Damage 10 million pounds.
- 1812 Sept. 14, **RUSSIA:** fire started by Russians in Moscow after French occupation destroyed 30,800 houses.
- 1917 Dec. 6, **CANADA:** explosion and fire at Halifax when ammunition ship collided with a vessel; 1,500 dead.
- 1922 **ASIA MINOR:** more than three-fifths of Smyrna destroyed by fire following Turkish occupation.
- 1948 July 28, **GERMANY:** explosion in I. G. Farben Ludwigshafen works killed hundreds, injured 6,000.
- 1949 Sept. 2, **CHINA:** fire on Chungking waterfront killed 1,700 and gutted 10,000 buildings.
- 1955 June 11, **FRANCE:** crash and explosion of racing car into crowd during Grand Prix race, Le Mans, killed 82.
- 1956 Aug. 7, **COLOMBIA:** about 1,200 reported killed when 7 army ammunition trucks exploded at Cali.
- 1956 Aug. 8, **BELGIUM:** 262 died in coal mine fire at Marcinelle.

UNITED STATES

- 1835 Dec. 16, **NEW YORK CITY:** 530 buildings destroyed by fire.
- 1871 Oct. 8, **CHICAGO:** the "Chicago Fire," which started in barn, swept 2,124 acres, burned 17,450 buildings, killed 250 persons; 196 million damage.

- 1872 Nov. 9, **BOSTON:** fire destroyed 800 buildings; 75 million damage.
- 1903 Dec. 30, **CHICAGO:** Iroquois Theatre fire killed 602.
- 1904 Feb. 7, **BALTIMORE, Md.:** fire destroyed most of business section; 125 million damage.
- 1937 March 18, **NEW LONDON, TEXAS:** explosion destroyed schoolhouse; 413 children and 14 teachers killed.
- 1942 Nov. 28, **BOSTON:** Cocoanut Grove night club fire killed about 500.
- 1944 July 17, **PORT CHICAGO, CALIF.:** more than 300 killed in explosion of two ammunition ships.
- 1946 Dec. 7, **ATLANTA:** Fire in Winecoff Hotel killed 119.
- 1947 March 25, **CENTRALIA, ILL.:** explosion in coal mine killed 111 miners.
- 1947 April 16-18, **TEXAS CITY, TEXAS:** most of city destroyed, over 500 dead following explosion on ship.
- 1951 Dec. 21, near **WEST FRANKFORT, ILL.:** 119 coal miners died in explosion.
- 1953 Oct. 16, **BOSTON, MASS.:** explosion and fire aboard U. S. aircraft carrier *Leyte* killed 37.
- 1956 Nov. 25, near **SAN DIEGO, CALIF.:** forest fires destroyed about 40,000 ac.; 11 killed.
- 1957 Feb. 4, near **BISHOP, VA.:** 37 died in coal mine blast.
- 1957 Feb. 5, **RENO, NEV.:** gas explosions destroyed city block; 2 died.

Shipwrecks (not including military or naval action)

WORLD

- 1833 May 11, *LADY OF THE LAKE*: bound from England to Quebec, struck iceberg; 215 perished.
- 1853 Sept. 29, *ANNIE JANE*: emigrant vessel off coast of Scotland; 348 persons died.
- 1912 March 5, *PRINCIPE DE ASTURIAS*: Spanish steamer struck rock off Sebastien Pt.; 500 drowned.
- 1912 April 15, *TITANIC*: sank after colliding with iceberg; 1,513 died.
- 1914 May 29, *EMPRESS OF IRELAND*: sank after collision in St. Lawrence River; 1,024 perished.
- 1928 Nov. 12, *VESTRIS*: British steamer sank in gale off Virginia; 110 persons died.
- 1931 June 14, French excursion steamer overturned in gale off St. Nazaire; approximately 450 died.
- 1939 June 1, Submarine *THETIS*: sank in Liverpool Bay, Eng.; 99 persons perished.
- 1942 Oct. 2, *QUEEN MARY*: rammed and sank a British cruiser; 338 aboard the cruiser died.
- 1948 Dec. 3, *KIANGYA*: Chinese refugee ship wrecked in explosion; about 1,000 believed dead.
- 1949 Jan. 27, *TAIPING*: Chinese liner collided with collier and both sank; at least 600 died.
- 1949 Sept. 17, *NORONIC*: Canadian Great Lakes cruise ship burned at Toronto dock; about 130 died.
- 1950 Jan. 12, *TRUCULENT*: British submarine sank in Thames estuary after collision with tanker; 64 dead.
- 1951 April 16, *AFFRAT*: British submarine sank in English channel; 75 dead.
- 1953 Jan. 9, *CHANG TYONG-HO*: South Korean ferry foundered off Pusan; 249 reported dead.
- 1953 Jan. 31, *PRINCESS VICTORIA*: British ferry sank in Irish Sea; 133 reported lost.
- 1953 Aug. 1, *MONIQUE*: French motor ship with 120 aboard disappeared in South Pacific.
- 1956 June 3, Steamship sank during monsoon in Bay of Bengal; about 200 drowned.
- 1956 July 25, *ANDREA DORIA*: Italian liner collided with Swedish liner *Stockholm* off Nantucket Island, Mass., sinking next day; 52, mostly passengers aboard Italian ship, dead or unaccounted for; more than 1,600 rescued.
- 1957 July 14, *ESHGHABAD*: Soviet ship ran aground in Caspian Sea; about 270 perished.

U. S. AND U. S. LINES

- 1865 April 27, *SULTANA*: boiler explosion on Mississippi River steamboat near Memphis; 1,450 killed.
- 1898 Nov. 26, *CITY OF PORTLAND*: Loss of 157 off Cape Cod.
- 1904 June 15, *GENERAL SLOCUM*: excursion steamer burned in New York Harbor; 1,021 perished.
- 1915 July 24, *EASTLAND*: Great Lakes excursion steamer overturned in Chicago River; 812 died.
- 1934 Sept. 8, *MORRO CASTLE*: about 130 killed in fire occurring off Asbury Park, N. J.
- 1939 May 23, Submarine *SQUALUS*: sank with 59 men off Hampton Beach, N. H.; 33 members of the crew were rescued.
- 1945 April 9, U. S. ship, loaded with aerial bombs, exploded at Bari, Italy; at least 360 killed.
- 1952 Jan. 10, *FLYING ENTERPRISE*: freighter sank about 35 miles off southwest England after valiant 12-day effort by captain, Henrik K. Carlsen, to save ship.
- 1952 April 26, *HOBSON*: minesweeper collided with aircraft carrier *Wasp* and sank during night maneuvers in mid-Atlantic; 176 persons were reported lost.
- 1954 Oct. 7, *MORMACKITE*: freighter capsized off Cape Henry, Va.; 37 lost.
- 1956 Sept. 15, *PELAGIA*: freighter sank in storm off Norway; 32 lost.

Aircraft Accidents (not including military or naval action)

WORLD

- 1921 Aug. 24, ENGLAND: *ZR-2*, British dirigible, broke in two on trial trip near Hull; 62 died.
- 1930 Oct. 5, FRANCE: British dirigible, *R-101*, crashed at Beauvais; 47 died.
- 1935 May 18, U.S.S.R.: stunt flier crashed into giant plane, the *Maxim Gorkey*; 49 killed.
- 1938 July 24, COLOMBIA: military plane crashed into grandstand during air review at Bogotá, killing 53.
- 1947 Feb. 15, COLOMBIA: Avianca airliner crashed near Bogotá; 53 persons were killed.
- 1948 Aug. 1, ATLANTIC OCEAN: French flying boat with 52 persons aboard disappeared.

- 1950 March 12, near CARDIFF, WALES: crash of chartered airliner killed 80.
- 1950 Nov. 13, near GRENOBLE, FRANCE: Canadian plane carrying Holy Year pilgrims crashed; 58 dead.
- 1956 Feb. 18, near VALLETTA, MALTA: Scottish airliner crash killed 50.
- 1956 Feb. 20, near CAIRO, EGYPT: desert crash of French airliner; 52 died.
- 1956 June 20, off ASBURY PARK, N. J.: Venezuelan airliner exploded and fell into Atlantic, killing all 74 aboard.
- 1956 Dec. 9, near CHILLIWACK, B. C., CANADA: Canadian airliner crashed; all 62 aboard killed.
- 1957 March 17, near CEBU CITY, PHILIPPINES: Pres. Ramón Magsaysay and 24 others killed in crash.
- 1957 July 16, near BIAK ISLAND, NEW GUINEA: Crash of Dutch airliner killed 57.
- 1957 Aug. 11, near QUEBEC, CANADA: 79 died in crash of chartered transatlantic airliner; worst Canadian air accident to date.
- U. S. AND U. S. LINES**
- 1925 Sept. 3, CALDWELL, OHIO: U. S. dirigible *Shenandoah* broke apart, killing 14.
- 1933 April 4, NEW JERSEY COAST: U. S. dirigible *Akron* crashed into sea; 73 died.
- 1937 May 6, LAKEHURST, N. J.: German zeppelin *Hindenburg* destroyed by fire at tower mooring; 36 persons were killed.
- 1947 June 13, near LEESBURG, VA.: Fifty killed in crash of airliner.
- 1947 Oct. 24, BRYCE CANYON, UTAH: airliner crashed into hillside after catching fire in midair; 52 persons were killed.
- 1949 June 7, near SAN JUAN, PUERTO RICO: crash of converted army transport into ocean killed 53; 28 rescued.
- 1949 Nov. 1, WASH., D. C.: fighter plane rammed airliner, killing 55.
- 1950 Aug. 31, near CAIRO, EGYPT: crash of U. S. airliner killed 55, including 23 Americans.
- 1951 March 23, ATLANTIC OCEAN: U. S. Air Force transport with 53 aboard disappeared.
- 1951 April 25, near KEY WEST, FLA.: Cuban airliner and U. S. Navy plane collided; 43 killed.
- 1951 June 30, ROCKY MOUNTAIN NATIONAL PARK, COLO.: airliner crash killed 50.
- 1951 Dec. 16, ELIZABETH, N. J.: nonscheduled airliner crash killed 56.
- 1952 Jan. 22, ELIZABETH, N. J.: 29 killed, including former Sec. of War Robert P. Patterson, when airliner hit apartments; 7 were on ground.
- 1952 Feb. 11, ELIZABETH, N. J.: third major air disaster in Elizabeth within 2 months fatally injured 33.
- 1952 April 11, near SAN JUAN, PUERTO RICO: airliner crashed into sea; 52 killed, 17 rescued.
- 1952 April 29, NORTH CENTRAL BRAZIL: airliner bound for New York crashed in jungle; 50 died.
- 1952 Nov. 23, near ANCHORAGE, ALASKA: Air Force transport crash; 52 killed.
- 1952 Dec. 20, MOSES LAKE, WASHINGTON: crash of Air Force "Globemaster" killed 87 servicemen, injured 28.
- 1953 Feb. 14, GULF OF MEXICO: airliner crash during storm killed 46.
- 1953 June 18, near TOKYO, JAPAN: crash of U. S. Air Force "Globemaster" killed 129 servicemen in world's worst air disaster to date.
- 1953 July 11, PACIFIC OCEAN: airliner crashed about 325 mi. east of Wake Island; 58 persons were killed.
- 1954 Oct. 31, ATLANTIC OCEAN: U. S. navy plane with 42 aboard lost.
- 1955 March 22, near HONOLULU, HAWAII: crash of U. S. navy transport plane killed 66.
- 1955 Aug. 11, near EDELWEILER, GERMANY: two U. S. troop carriers collided; 66 air force personnel killed.
- 1955 Oct. 6, near LARAMIE, WYO.: airliner hit mountain; 66 died.
- 1955 Nov. 1, near LONGMONT, COLO.: criminally-placed time-bomb destroyed airliner in flight, killing 44.
- 1956 June 30, GRAND CANYON, ARIZ.: 128 died in collision of two airliners; worst commercial air disaster to date.
- 1956 July 13, near FORT DIX, N. J.: 45 of 66 aboard killed in crash of U. S. air force transport.
- 1956 Oct. 11, ATLANTIC OCEAN: U. S. Air Force plane with 59 aboard disappeared.
- 1957 Feb. 1, NEW YORK, N. Y.: airliner crash on Rikers island killed 20 of 101 aboard.
- 1957 March 21, PACIFIC OCEAN: U. S. Air Force plane disappeared; 67 lost.

Railroad Accidents WORLD

- 1857 March 17, DES JARDINES CANAL, CANADA: train derailed on bridge; about 60 killed.
- 1864 June 29, near BELOEIL, CANADA: about 90 killed when train ran through open switch.

- 1879 Dec. 28, DUNDEE, SCOTLAND: train blown off Tay bridge; 73 drowned.
- 1881 June 24, near CUARTLA, MEXICO: about 200 died when train fell into river.
- 1882 July 13, near TCHERNY, RUSSIA: more than 150 killed in derailment.
- 1889 June 12, near ARMAGH, IRELAND: about 80 killed in collision.
- 1891 June 14, near BASEL, SWITZERLAND: about 100 killed in collision.
- 1915 May 22, GRETNA, SCOTLAND: two passenger trains and troop train collided; 227 killed.
- 1917 Dec. 12, MODANE, FRANCE: almost 550 reported killed in derailment of troop train near mouth of Mt. Cenis tunnel.
- 1938 Dec. 25, near KISHINEV, RUMANIA: about 100 killed in collision.
- 1939 Dec. 22, near MAGDEBURG, GERMANY: more than 125 killed in collision; 99 killed in another wreck near Friedrichshafen.
- 1940 Jan. 29, OSAKA, JAPAN: 200 killed in collision.
- 1944 March 2, near SALERNO, ITALY: 521 suffocated when Italian train stalled in tunnel.
- 1949 Oct. 22, near NOWY DWOR, POLAND: more than 200 reported killed in derailment of Danzig-Warsaw express.
- 1950 April 6, near RIO DE JANEIRO, BRAZIL: train wrecked when bridge collapsed; 108 killed or missing.
- 1952 March 4, near RIO DE JANEIRO, BRAZIL: about 120 reported killed in collision of 2 trains.
- 1952 Oct. 8, HARROW-WEALDSTONE, ENGLAND: two express trains crashed into commuter train; 112 dead.
- 1953 Dec. 24, near WAIOURI, NEW ZEALAND: train plunged through bridge; 155 dead and others missing.
- 1953 Dec. 24, near SAKVICE, CZECHOSLOVAKIA: crash of two trains reported to have killed 103.
- 1954 Sept. 28, near HYDERABAD, INDIA: 137 dead when train plunged into river.
- 1956 Sept. 2, near MAHBUBNAGAR, INDIA: at least 120 killed when bridge collapsed under train.
- 1957 Sept. 1, near KENDAL, JAMAICA: about 175 killed when train plunged into ravine.

UNITED STATES

- 1856 July 17, near PHILADELPHIA, PA.: train carrying Sunday-school children wrecked; 66 killed.
- 1876 Dec. 29, ASHTABULA, O.: 80 killed when train broke through bridge.
- 1887 Aug. 10, near CHATSWORTH, ILL.: about 80 killed in wreck.
- 1904 Aug. 7, near EDEN, COLO.: about 100 killed in wreck.
- 1910 March 1, WELLINGTON, WASH.: more than 90 killed.
- 1918 July 9, near NASHVILLE, TENN.: more than 100 killed.
- 1938 June 19, MILES CITY, MONT.: train ran through bridge; 47 killed.
- 1943 Sept. 6, PHILADELPHIA, PA.: train derailed; 79 killed.
- 1943 Dec. 16, near RENNERT, N. C.: 72 killed in derailment and collision.
- 1944 Dec. 31, near OGDEN, UTAH: 48 killed in collision.
- 1946 April 25, NAPERVILLE, ILL.: at least 47 killed in collision.
- 1950 Feb. 17, ROCKVILLE CENTRE, N. Y.: head-on crash of two commuter trains killed 30.
- 1950 Nov. 22, RICHMOND HILL, N. Y.: 79 died when one commuter train crashed into rear of another.
- 1951 Feb. 6, WOODBRIDGE, N. J.: 85 died when commuter train plunged through temporary overpass.

America's Tallest Buildings

City	Building	No. of stories	Height, feet
New York	Empire State	102	1,250
New York	Chrysler	77	1,046
New York	60 Wall Tower	66	950
New York	Bk. of Manhattan	71	925
New York	R. C. A.	70	850
New York	Woolworth	60	792
New York	City Bank-Farmers Trust	57	741
Cleveland	Terminal Tower	52	708
New York	500 Fifth Avenue	60	700
New York	Metropolitan Life	50	700
New York	Chanin	56	680
New York	Lincoln	53	673
New York	Irving Trust	50	654
New York	General Electric	50	641
New York	Waldorf-Astoria	47	625
New York	10 E. 40th St.	48	621

City	Building	No. of stories	Height, feet
New York	New York Life	40	617
New York	Singer	47	612
Chicago	Board of Trade	44	605
Chicago	Prudential	41	602
New York	U. S. Court House	37	590
Pittsburgh	Gulf	44	582
New York	Municipal	40	580
Cincinnati	Carew Tower	48	574
New York	Socony Mobil	42	572
New York	Continental Bank	48	565
New York	Sherry-Netherland	40	560
New York	N. Y. Central	35	560
Chicago	Pittsfield	39	557
Columbus	Lincoln-LeVeque Tower	46	556
Chicago	Sheraton	42	555
Detroit	Penobscot	47	551

Record Passages of Atlantic (Screw) Steamships since 1900

WESTWARD PASSAGES

Date	Ship and (flag*)	European port	Time			Speed knots	Sea miles
			D.	H.	M.		
1900,01	DEUTSCHLAND (G)	Southampton	5	11	54	23.15	3,044
1907 }	LUSITANIA† (B)	Queenstown	{	...	...	24.00	....
1910 }			{	4	11	40	25.88
1908 }	MAURETANIA† (B)	"					....
1911 }				4	10	41	26.06
1929	" (B)	Cherbourg	4	21	44	26.9	3,162
1929	BREMEN† (G)	"	4	17	42	27.83	....
1930	EUROPA† (G)	"	4	17	6	27.91	3,157
1933	REX† (I)	Gibraltar	4	13	58	28.92	3,181
1935	NORMANDIE† (F)	Bishop's Rock	4	3	2	29.98	3,015
1936 }	QUEEN MARY† (B)	"	{	4	0	27	30.14
1938 }			{	3	21	48	30.99
1952	UNITED STATES† (US)	Bishop's Rock	3	12	12	34.51	2,906

EASTWARD PASSAGES

1900,01	DEUTSCHLAND† (G)	Eddystone Lt.	5	7	38	23.51	3,082
1904	KAISER WILHELM II† (G)	Plymouth	5	8	16	23.58	....
1907 }	LUSITANIA† (B)	Queenstown	{	...	...	23.61	....
1910 }			{	4	15	50	25.57
1908 }	MAURETANIA† (B)	"		4	13	41	25.89
1911 }							....
1924	" (B)	Cherbourg	5	1	49	26.25	3,198
1929	" (B)	Plymouth	4	17	50	27.22	3,098
1929 }			{	4	14	30	27.91
1933 }	BREMEN† (G)	Cherbourg	{	4	17	43	28.14
1933 }			{	4	16	15	28.51
1935 }			{	4	3	25	30.35
1935 }	NORMANDIE† (F)	Bishop's Rock	{	4	...	6	30.99
1937 }			{	3	23	57	30.63
1936 }	QUEEN MARY† (B)	"	{	3	20	42	31.69
1938 }			{	3	10	40	35.59
1952	UNITED STATES† (US)	Bishop's Rock	3	10	40	35.59	3,144

* (B)—British; (G)—German; (I)—Italian; (F)—French. † Vessels which have held the Blue Riband. Source: Maritime Adm.

Leading Passenger Ships Calling at U. S. and Canadian Ports

Source: Lloyd's Register of International Shipping, 1956-57 edition, except for starred items and number of passengers.

Line	Name of Ship	Flag	Length	Tonnage	Passengers*
American-Export.....	Constitution; Independence	United States	682	23,719	1,000
American-President.....	Pres. Cleveland; Pres. Wilson	United States	609	15,437	830
Canadian Pacific.....	Empress of Britain	British	640*	25,516	1,050
Cunard.....	Mauretania	British	772	35,674	1,157
	Queen Elizabeth	British	1,031	83,673	2,233
	Queen Mary	British	1,019	81,237	1,957
French.....	Ile de France	French	793	44,356	1,262
	Liberte	French	937	51,839	1,497
Furness.....	Queen of Bermuda	British	580	22,501	731
Greek.....	New York	Greek	579	16,991	1,246
	Olympia	Liberian	611	22,979	1,307
Holland-America.....	Nieuw Amsterdam	Netherlands	759	36,667	1,228
	Ryndam	Netherlands	503	15,015	893
Italian.....	Conte Biancamano	Italian	665	23,562	1,463
	Saturnia	Italian	630	24,346	1,294
	Vulcania	Italian	631	24,496	1,270
Matson.....	Matsonia	United States	604	18,170	770
Moore-McCormack.....	Argentina†	United States	613	20,707	510
	Brazil†	United States	613	20,683	510
Norwegian-American.....	Bergensfjord	Norwegian	578	17,000	890
Swedish-American.....	Gripsholm	Swedish	531	23,500	842
United States.....	America	United States	723	26,314	1,046
	United States	United States	917	53,329	1,928
Zim-Israel.....	Israel†	Israeli	501	9,831	312
	Zion†	Israeli	501	9,855	312

† Sister ships.

HISTORICAL AND NEWS EVENTS

FROM ANCIENT TO MODERN TIMES

Compiled by

ENCYCLOPEDIA BRITANNICA

(See also our section entitled *Headline History of Our Times*)

- Actium, Battle of** (31 B.C.). Octavius defeats Mark Anthony.
- Alexander the Great conquers Greece, Persia, Egypt and part of India** (334-323 B.C.). Major battles: Granicus (334 B.C.), Issus (333), Arbela (331).
- American Revolution** (1775-83). Outstanding events: 1775—Battle of Lexington-Concord (Apr. 19). Battle of Bunker Hill (June 17). 1776—Battle of Long Island (Aug. 27). 1777—Burgoyne surrenders at Saratoga (Oct. 17). 1781—Battle of Cowpens (Jan. 17). Battle of Yorktown (Sept. 28-Oct. 19), and British surrender by Cornwallis. 1783—Treaty signed by U. S. and Britain (Sept. 3).
- "Babylonian Captivity" of Papacy** with seat at Avignon (1309-77).
- Bacon's Rebellion** (May 10-Oct. 18, 1676). Nathaniel Bacon leads unsuccessful insurrection in Virginia because of abuses in government administration and taxation.
- Balfour Declaration** (Nov. 2, 1917) promises Jewish homeland in Palestine.
- Balkan Wars** (1912-13). Bulgaria, Serbia, Greece and Montenegro defeat Turkey; later, Bulgaria attacks Serbia and Greece and is defeated.
- Bastille destroyed** (July 14, 1789).
- Benedictine Order** founded at Monte Cassino (c. A.D. 529).
- Bible** translated by Wycliffe into English (1382-84); Douay Version published (1582 & 1609-10); King James Version published (1611).
- Black Death** (beginning c. 1347) wipes out at least one-quarter of population of Europe.
- Black Friday** (Sept. 24, 1869). Financial panic results from gold corner in U. S.
- Boer War** (1899-1902). Boers defeated by British; sign peace treaty at Pretoria (May 31, 1902).
- Boston Massacre** (Mar. 5, 1770). British soldiers fire on Boston mob, killing 3.
- Boston Tea Party** (Dec. 16, 1773). Colonials dump tea in Boston Harbor because of tea tax.
- Boxer Rebellion** (1900). Uprising by secret society in northern China against foreigners.
- Brown, John, and 18 followers raid Harpers Ferry** (Oct. 16, 1859) and seize arsenal; taken prisoners by U. S. Marines (Oct. 18); Brown hanged (Dec. 2).
- Burr-Hamilton duel.** See Hamilton.
- Cape-to-Cairo Railroad** completed (1918).
- Carthage** founded by Phoenicians (c. 900 B.C.); destroyed by Romans (146 B.C.).
- Châlons, Battle of** (A.D. 451). Attila the Hun defeated by Romans.
- Charlemagne** crowned Emperor of the West (A.D. 800).
- Charles I** beheaded (Jan. 30, 1649). See also Great Rebellion.
- Children's Crusade** (1212). About 50,000 unarmed children set out to recover Holy Sepulchre; all lost or die on the way.
- Chinese-Japanese War** (1894-95). Japan wins Formosa, Pescadores and part of southern Manchuria; Korea becomes independent (annexed by Japan 1910).
- Christianity** made official religion of Roman Empire (A.D. 330).
- Civil War, American** (1861-65). Outstanding events: 1861—First Battle of Bull Run (July 21). 1862—Monitor defeats Merrimac (Mar. 9). Battle of Antietam (Sept. 15-17). 1863—Lincoln's Emancipation Proclamation (Jan. 1). Battle of Gettysburg (July 1-3). Grant captures Vicksburg (July 4). Battle of Lookout Mountain (Nov. 23-25). 1864—Battle of the Wilderness (May 5-6). Sherman's March through Georgia (Nov. 14-Dec. 22). 1865—Lee surrenders at Appomattox (Apr. 9).
- Code Napoléon**, unified codification of French law, adopted (1804).
- Code of Hammurabi** (c. 2300 B.C.). Oldest existing written code of laws.
- Communist Manifesto** issued by Karl Marx and Friedrich Engels (1848).
- Compromise of 1850** admits California as free state; organizes Utah and New Mexico as territories without mention

- of slavery; prohibits slave trade in D. C.; returns fugitive slaves to masters; pays Texas \$10 million for her claim to New Mexico.
- Confederacy** proclaimed by seceding states (Feb. 9, 1861); Jefferson Davis named President.
- Congress of Vienna (1814-15).** European powers, under leadership of Metternich, meet to settle problems of territory and government resulting from Napoleonic Wars.
- Constantinople** founded (as Byzantium) by Greeks (c. 660 B.C.); made capital of Eastern Roman Empire by Constantine the Great (A.D. 330); captured by Turks (1453); renamed Istanbul (1930).
- Council of Nicaea (A.D. 325).** Called by Constantine the Great; establishes official creed of Christianity (Nicene Creed).
- Council of Trent (1545-64).** Called by Pope Paul III, at suggestion of Emperor Charles V, to establish Catholic Counter Reformation.
- "Coxey's Army" (March. 25-May 1, 1894).** Jacob S. Coxey leads 20,000 unemployed on Washington, D. C.
- Crimean War (1853-56).** Russia loses claim to Greek Christians under Turkish flag.
- Crucifixion of Christ (c. A.D. 29).** According to New Testament, Christ rose from the dead 2 days later.
- Crusades (1096-1291).** European Christians, in 7 periods of conflict, attempt to recover Holy Land from Moslems. *See also* Children's Crusade.
- Custer massacre (June 25, 1876).** Gen. George A. Custer and his forces killed at Battle of Little Big Horn by Sioux.
- Divine Comedy** begun by Dante (1307); probably finished in last year of his life (1321).
- Dominican Order** founded (1215).
- Dorr Rebellion (1841-42).** Thomas W. Dorr leads unsuccessful attempt to extend franchise in Rhode Island; franchise extended 1843.
- Dred Scott case (1846).** Dred Scott, Negro slave, sues for freedom on claim he has lived for a time on free soil; U. S. Supreme Court rules (Mar. 6, 1857) that Scott is not a citizen and has no standing in court.
- Dreyfus case (1894).** Capt. Alfred Dreyfus found guilty of treason in France and sentenced to Devil's Island. Finally acquitted (1906).
- Easter Rebellion (April. 24, 1916).** Irish nationalists unsuccessfully attempt to throw off British rule.
- Edict of Nantes (1598).** Extends toleration to Huguenots (French Protestants); its revocation (1685) causes widespread persecution of Huguenots.
- Evolution trial.** *See* Scopes.
- Fawkes, Guy.** *See* Gunpowder Plot.
- Feudalism,** lord-vassal social system, established throughout Europe (9th century); begins to break up (14th-15th centuries).
- Franciscan Order** founded (1210).
- Franco-Prussian War (1870-71).** France defeated by German states; loses Alsace-Lorraine.
- Freedom of press** established in America as John Peter Zenger, New York editor, is acquitted in libel case against Gov. Cosby (1735).
- French and Indian War.** *See* Seven Years' War.
- French Revolution (1789-99).** Outstanding events: 1789—Bastille destroyed (July 14). Feudal rights abolished (Aug. 4). 1792—September Massacres (Sept. 2-6). France becomes republic (Sept. 21). 1793—Louis XVI beheaded (Jan. 21); Marie Antoinette beheaded (Oct. 16). Reign of Terror (spring 1793-summer 1794). 1795—Napoleon heads army. Directory established (Oct. 27). (Revolution merges into Napoleonic Wars.)
- Gold rush** develops as gold is discovered at Sutter's Mill, near Sacramento, Calif. (Jan. 2, 1848).
- Great Rebellion (1642-49).** Civil wars in England. Charles I beheaded (Jan. 30, 1649); Cromwell establishes Commonwealth (1649).
- Great Wall of China** begun (255 B.C.).
- Gregorian Calendar** replaces Julian Calendar in Catholic countries (1582), in Britain and her Colonies (1752), in Russia (1918).
- Gunpowder Plot (1605).** Guy Fawkes, agent of conspirators against King and Parliament, seized as he is about to blow up House of Lords (Nov. 5).
- Hamilton-Burr duel (July 11, 1804)** results in Hamilton's death next day.
- Hastings, Battle of (1066).** Normans led by William the Conqueror invade England.
- Hegira (A.D. 622).** Mohammed flees from Mecca to Medina. Year I of Mohammedan calendar.
- Holy Alliance** formed by Russia, Austria and Prussia (Sept. 26, 1815); intended to regulate government according to Christianity but actually used for repressing political liberty.
- Holy Roman Empire** founded by Otto the Great (962); dissolved by Napoleon (1805).
- Huguenots.** *See* Edict of Nantes; St. Bartholomew Massacre.

- Hundred Years' War** (1338-1453). England loses lands in France. Major battles: Crécy (1346), Poitiers (1356), Agincourt (1415).
- Industrial Revolution** begins in England (c. 1780). Machines gradually replace hand tools, bringing about vast industrial and social changes.
- Inquisition** established (c. 1233) to combat heresy; put under state control in Spain (1480); abolished in France (1772), in Spain (1834).
- International, First** (1864). Founded in London to further world socialism; dissolved in Philadelphia (1876).
- International, Second** (1889). Founded in Paris to celebrate 100th anniversary of French Revolution.
- International, Third** (1919). Founded in Moscow as protest against inactivity of Second International; dissolved (1943). Also called *Communist International* or *Comintern*.
- Jamestown, Va.**, settled by British under Capt. John Smith (1607).
- Jerusalem** destroyed by Nebuchadnezzar (586 B.C.); returned to Jews by Cyrus (538 B.C.); captured by Titus (A.D. 70); captured by Crusaders (1099); captured by Saladin (1187).
- Jesuits** (Society of Jesus) founded by Ignatius of Loyola (1534).
- Joan of Arc** burned at stake (1431).
- Justinian Code** (A.D. 529). Codification of Roman law by Byzantine Emperor Justinian.
- Kansas-Nebraska Act** (1854) abrogates Missouri Compromise; permits territories of Kansas and Nebraska local option on slavery question; results in rioting and bloodshed.
- Leopold-Loeb case** (1924). Nathan Leopold and Richard Loeb kidnap and kill Bobby Franks in Chicago (May 22); sentenced to life imprisonment (July 21); Loeb killed by fellow convict (Jan. 28, 1936); parole refused to Leopold (May 14, 1953).
- Lindbergh flight** (May 20-21, 1927). Charles A. Lindbergh makes first solo flight across Atlantic.
- Locarno Conferences** (Oct. 1925). Seek to insure peace and preserve boundaries in Europe by mutual guarantees.
- Louis XVI** beheaded (Jan. 21, 1793). *See also* French Revolution.
- Magna Carta**, charter listing rights and privileges of English barons, proclaimed at Runnymede (June 15, 1215); King John forced by barons to accept it.
- Manhattan Island** purchased by Peter Minuit from Indians (1626) for trinkets worth 60 guilders (about \$24).
- Mary, Queen of Scots**, convicted in England (1586) of being accomplice in plot to murder Queen Elizabeth; beheaded (Feb. 8, 1587).
- Maximilian, Emperor of Mexico**, executed by Benito Juárez (June 19, 1867) after Napoleon III of France withdraws support of Mexican empire.
- Merrimac**. *See* Monitor.
- Mexican War** (1846-1848) ends in American victory; Treaty of Guadalupe Hidalgo signed (1848).
- Ming Dynasty** (1368-1644). Noted for great development of culture and art in China.
- Missouri Compromise** (1820) admits Maine as free state, Missouri as slave state; slavery prohibited in Louisiana Territory north of 36° 30'. *See also* Kansas-Nebraska Act.
- Monitor**, Union ship, defeats *Merrimac*, Confederate ship (Mar. 9, 1862).
- Mooney, Tom**, sentenced to death for bomb explosion in San Francisco during Preparedness Day Parade (1916); sentence commuted to life (1918); freed (1939).
- Mormonism** (Church of Jesus Christ of Latter-day Saints) founded by Joseph Smith at Fayette, N. Y. (Apr. 6, 1830).
- Moses** leads Jews out of Egypt (c. 1300 B.C.).
- Napoleonic Wars** (1796-1815). Outstanding events: 1798—Campaign in Egypt. 1805—Nelson defeats French at Battle of Trafalgar (Oct. 21). French defeat Russians and Austrians at Battle of Austerlitz (Dec. 2). 1813—French defeated in Battle of Leipzig (Oct. 16-19). 1814—Napoleon abdicates (Apr. 11); sent to Elba. 1815—Napoleon flees Elba (Feb. 26). Napoleon defeated in Battle of Waterloo (June 18). *See also* Congress of Vienna.
- Northwest Ordinance** (1787). Adopted for territory north of Ohio River. Establishes method for admitting new states; prohibits slavery in territory.
- Orthodox Eastern Church** excommunicated by Pope Leo IX (1054); schism final between Western and Eastern Churches.
- Parliament** established in England (1295).
- Peloponnesian War** (431-404 B.C.). Sparta under Lysander defeats Athens.
- Persian Wars** (499-478 B.C.). Greece defeats Persia. Major battles: Marathon (490 B.C.), Thermopylae (480), Salamis (480), Plataea (479), Mycale (479).
- Pilgrims** land at Plymouth Rock (Dec. 21, 1620).
- Plague** in London ("Great Plague") causes 68,596 deaths (1665).
- Plymouth Rock**. *See* Pilgrims.

Poland partitioned out of existence among Prussia, Russia and Austria (1772, 1793, 1795).

Pony Express (1860-61). Between St. Joseph, Mo., and Sacramento, Calif.

Pullman strike (June-July 1894). Strike smashed by Federal troops; Eugene V. Debs jailed for contempt.

Punic Wars (264-146 B.C.). Romans defeat Carthaginians and destroy Carthage (146 B.C.). Major battles: Cannae (216 B.C.), Zama (202).

Rasputin ("Black Monk"), confessor to Tsarina, murdered (Dec. 31, 1916).

Reformation (beginning 16th century). Outstanding events: Luther nails his 95 theses to church door at Wittenberg, Germany (1517). Zwingli begins Reformation in Switzerland (1519). Luther burns papal bull and canon law (1520). Calvin publishes *Institutes of the Christian Religion* (1536). Act of Supremacy makes King head of Church of England (1534). Calvin organizes Geneva as theocratic state (1541). Knox establishes Presbyterian Church in Scotland (1560).

Renaissance (14th-16th centuries). Revival of classical learning in Europe stimulates vigorous activity in arts, literature, humanities, etc.

Roman Empire established under Augustus (27 B.C.); divided into Western and Eastern Empires (A.D. 395); Western Empire falls (476); Eastern Empire falls with capture of Constantinople (1453).

Rome founded, according to legend, by Romulus (753 B.C.); burned, perhaps by Nero (A.D. 64); sacked by Visigoths under Alaric (410); sacked by Vandals under Genseric (455).

Russo-Japanese War (1904-05). Port Arthur surrenders to Japanese (Jan. 2, 1905); Treaty of Portsmouth, N. H. (Sept. 5).

Russo-Turkish War (1877-78). Power of Turkey in Europe broken; redivision of southeastern Europe at Congress of Berlin (June 13-July 13, 1878).

St. Bartholomew, Massacre of (Aug. 24-Oct. 3, 1572). Some 50,000 Huguenots (French Protestants) killed in Paris and provinces at instigation of Catherine de Medici.

St. Valentine's Day Massacre (Feb. 14, 1929). 6 members of Moran gang lined up against wall by rival gang and shot.

Savonarola, Florentine priest and dictator, tried for sedition and heresy (1498); hanged and burned (May 23).

Scopes Evolution Trial held at Dayton, Tenn. (July 10-21, 1925). John T. Scopes prosecuted by William Jennings Bryan for teaching evolution in Tennessee school; defended by Clarence Darrow.

Scopes convicted but decision later set aside.

Seven Years' War (1756-63). France, Austria, Sweden, Russia vs. England and Prussia. Clive defeats French at Battle of Plassey (1757), giving British supremacy in India; England wins Canada; Prussia retains Silesia. (American phases of war known as French and Indian War, 1754-63.)

Shays' Rebellion (1786). Capt. Daniel Shays leads unsuccessful insurrection against Massachusetts government because of economic crisis.

Slavery in British Empire abolished by Parliament (1833).

Slavery introduced into American Colonies at Jamestown, Va. (1619); abolished in U. S. by 13th Amendment (1865).

Snyder-Gray case (1927). Ruth Snyder and Judd Gray murder her husband, Albert Snyder (Mar. 20); both executed at Sing Sing (Jan. 12, 1928).

Spanish-American War (1898). Outstanding events: U. S. battleship *Maine* blown up in Havana harbor (Feb. 15). Dewey destroys Spanish fleet at Manila (May 1). Charge of San Juan Hill (July 1). Cervera's fleet destroyed off Santiago, Cuba, by U. S. ships (July 3). Treaty of Paris (Dec. 10).

Spanish Armada destroyed by British (1588).

Spartacus, Roman slave and gladiator, leads unsuccessful slave insurrection (73-71 B.C.).

Stamp Act (effective Nov. 1, 1765). First direct tax placed on America by Britain; protested by Stamp Act Congress in New York (Oct. 7-25); repealed by Britain (Mar. 18, 1766).

Sutter's Mill. See Gold.

Texan war of independence from Mexico (1836). Major battles: Alamo (Mar. 6), San Jacinto (Apr. 21).

Thaw-White case (1906). Harry K. Thaw, millionaire, murders Stanford White, noted architect, in Madison Square Garden (June 25).

Thirty Years' War (1618-1648). England, Holland, France, Sweden and German Protestants against Spain, Italy and German Catholics; Peace of Westphalia ends conflict, Alsace going to France, Swiss independence being recognized, and German secularized states being given religious freedom.

Tours, Battle of (A.D. 732). Charles Martel defeats Moslems, checking their advance in western Europe. Also called Battle of Poitiers.

Trojan War (c. 1200 B.C.). Greeks defeat Trojans; destroy city of Troy.

Tutankhamen's tomb discovered near Luxor by Lord Carnarvon and Howard Carter (1922).

Tweed Ring, corrupt New York political group headed by Wm. Marcy Tweed, Tammany Boss, broken up (1872); Tweed convicted (Nov. 5).

War of 1812 (1812-1815). Outstanding events: 1813—Battle of Lake Erie (Sept. 10). 1814—British burn White House at Washington (Aug. 24-25). Battle of Lake Champlain (Sept. 11). U. S. signs treaty with Britain at Ghent (Dec. 24). 1815—Battle of New Orleans (Jan. 8). (Slowness of communications was responsible for continuation of hostilities after treaty.)

Wars of the Roses (1455-85). House of York (white rose) against House of Lancaster (red rose). Richard III slain at Battle of Bosworth Field (1485); Tudor line started by Henry VII.

Whisky Insurrection (July-Nov. 1794). Farmers in western Pennsylvania revolt unsuccessfully against excise tax of 1791.

Witch trials in Salem, Mass., result in death sentences for 19 women by Judge Samuel Sewall (1692).

Woman suffrage first granted in U. S. by Wyoming Territory (1869).

World War I (1914-18). Central Powers (Austria-Hungary, Germany, Bulgaria, Turkey) vs. Allies (U. S., Britain, France, Russia, Belgium, Serbia, Greece, Rumania, Montenegro, Portugal, Italy, Japan). Outstanding events: 1914—Austria declares war on Serbia (July 28). Germany declares war on Russia (Aug. 1) and on France (Aug. 3). Germany invades Belgium (Aug. 4). Britain declares war on Germany (Aug. 4). Germans defeat Russians at Tannenberg, East Prussia (Aug. 31). First Battle of the Marne (Sept. 5-12). 1915 Dardanelles campaign against Turkey fails. 1916—Battle of Jutland (May 31). Battles of the Somme (July-Nov.). Germans turned back at Verdun (Sept. 3). Rumania overrun by Central Powers; fall of Bucharest (Dec. 6). 1917—Germany begins unrestricted submarine warfare. U. S. declares war (Apr. 6). Battle of Caporetto (Oct. 24-Dec. 26). 1918—Second Battle of the Somme (Aug. 21-Sept. 3). Third Battle of the Aisne (May 27-June 6). Second Battle of the Marne (July 15-Aug. 7). U. S. troops take St. Mihiel (Sept. 13). Battle of the Meuse-Argonne (Sept. 20-Nov. 11). Allies break Hindenburg line (Oct. 5). Armistice signed (Nov. 11).

Zenger case. See Freedom of press.

Firsts in America

Occasionally other sources may differ with this list. Our selection is based on our editorial judgment.

Admiral in U. S. Navy: David Glasgow Farragut, 1866.

Air-mail route, first transcontinental: Between New York City and San Francisco, 1920.

Assembly, representative: House of Burgesses, founded in Virginia, 1619.

Bank established: Bank of North America, Philadelphia, 1781.

Birth in America of English parents: Virginia Dare, born Roanoke Island, N. C., 1587.

Botanic garden: Established by John Bartram in Philadelphia, 1728. (Oldest existing one was established in Cambridge, Mass., in 1807.)

Cartoon, colored: "The Yellow Kid," by Richard Outcault, in *New York World*, 1895.

College to confer degrees on women: Oberlin (Ohio) College, 1841.

College to establish coeducation: Oberlin (Ohio) College, 1833.

Electrocution of a criminal: William Kemmler in Auburn Prison, Auburn, N. Y., Aug. 6, 1890.

Five and Ten Cents Store: Founded by Frank Woolworth, Utica, N. Y., 1879 (moved to Lancaster, Pa., same year).

Fraternity: Phi Beta Kappa; founded Dec. 5, 1776, at College of William and Mary.

Law to be declared unconstitutional by U. S. Supreme Court: Judiciary Act of 1789. Case: Marbury vs. Madison, 1803.

Library, circulating: Philadelphia, 1731.

Newspaper published for a continuous period: *The Boston News-Letter*, April, 1704.

Newspaper, illustrated daily: *New York Daily Graphic*, 1873.

Newspaper published daily: *Pennsylvania Packet and General Advertiser*, Philadelphia, Sept., 1784.

Newsreel: Pathé Frères of Paris, in 1910, circulated a weekly issue of their *Pathé Journal*.

Oil well, commercial: Titusville, Pa., 1859.

Panel quiz show on radio: *Information Please*, May 17, 1938.

Postage stamps issued: 1847.

President pro tempore of the U. S. Senate: John Langdon, of New Hampshire, 1789.

Railroad, transcontinental: Central Pacific and Union Pacific railroads joined near Ogden, Utah, May 10, 1869.

Savings bank: The Provident Institute for Savings, Boston, 1816.

Science museum: Founded by Charleston (S. C.) Library Society, 1773.

Skyscraper: Home Insurance Co., Chicago, 1885 (10 floors, 2 added later).

Slaves brought into America: At Jamestown, Va., 1619, from a Dutch ship.

Sorority: Kappa Alpha Theta, at De Pauw University, 1870.

State to abolish capital punishment: Michigan, 1847.

State to enter Union after original 13: Vermont, 1791.

State to ratify U. S. Constitution: Delaware, Dec. 7, 1787.

Steam-heated building: Eastern Hotel, Boston, 1845.

Steam railroad (carried passengers and freight): Baltimore & Ohio, 1830.

Strike on record by union: Journeymen Printers, New York, 1776.

Subway: Opened in Boston, 1897.

"Tabloid" picture newspaper: *The Illustrated Daily News* (now *The Daily News*), New York City, 1919.

Vaudeville theater: Gaiety Museum, Boston, 1883.

Woman cabinet member: Frances Perkins, Secretary of Labor, 1933.

Woman candidate for President: Belva Ann Bennett Lockwood, National Equal Rights party, 1884.

Woman doctor of medicine: Elizabeth Blackwell; received M.D. from Geneva Medical College of Western New York, 1849.

Woman elected governor of a state: Mrs. Nellie Tayloe Ross, Wyoming, 1925.

Woman elected to U. S. Senate: Mrs. Hattie Caraway, Arkansas; elected Nov. 1932.

Woman graduate of law school: Mrs. Ada H. Kepley, Union College of Law, Chicago, 1870.

Woman member of U. S. House of Representatives: Jeannette Rankin; elected Nov. 1916.

Woman member of U. S. Senate: Mrs. Rebecca Latimer Felton of Georgia; appointed Oct. 3, 1922.

Woman suffrage granted: Wyoming Territory, 1869.

Written constitution: *Fundamental Orders of Connecticut*, 1639.

Zoo: Philadelphia, 1874.

Societies and Foundations

Source: Questionnaires to Societies and Foundations.

AMERICAN BIBLE SOCIETY: Founded 1816 to translate, publish and encourage wider distribution of Holy Scriptures.

BOY SCOUTS OF AMERICA: Founded 1910. Purpose is to promote character development, citizenship training and physical fitness for boys.

CAMP FIRE GIRLS, INC.: Founded 1910, to perpetuate spiritual ideals of the home and to stimulate and aid habits making for health and character. Educational-recreational program available to all girls from 7 to 18.

CARNEGIE CORPORATION OF NEW YORK: Founded 1911 by Andrew Carnegie to advance knowledge and understanding in U. S. and British Commonwealth. Grants awarded to colleges and organizations engaged in research. Assets (1956): \$184,000,000 (cost basis).

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE: Founded 1910 by Andrew Carnegie. To work toward international peace. Assets (June 30, 1956): \$17,328,987.

COMMONWEALTH FUND: Founded 1918 by Mrs. Stephen V. Harkness. Purpose is to promote health through grants for medical education, research, etc. Endowment (1957): \$76,000,000.

DUKE ENDOWMENT, THE: Founded 1925 by James B. Duke. Purpose is to assist North and South Carolina philanthropic institutions, including universities, hospitals, orphanages and the Methodist Church. Assets (Dec. 31, 1956): \$142,000,000 (book value).

ELKS, BENEVOLENT AND PROTECTIVE ORDER OF: Founded 1868 to practice charity, justice, brotherly love and fidelity. Charitable expenditures (1956): \$7,000,000.

FIELD FOUNDATION, INC.: Founded 1940 by Marshall Field. Present purpose is to promote the welfare of children and improve intercultural and interracial relations through grants. Assets (1957): Over \$17,000,000.

FORD FOUNDATION: Founded 1936 by Henry Ford and his family. Purpose is to devote resources to programs for advancement of peace, education, behavioral sciences, democratic institutions and economic stability. Total assets (1956): \$999,107,132.

FREEMASONRY: Introduced into American Colonies before 1730. Purpose is the moral and spiritual elevation of its members and, through them, of mankind. Masonic orders in U. S. include: Royal Arch, Grand Council Knights Templar, Scottish Rite.

GIRL SCOUTS OF THE U.S.A.: Founded 1912. Purpose is to help girls develop as happy, resourceful individuals.

GUGGENHEIM (JOHN SIMON) MEMORIAL FOUNDATION: Founded 1925. Purpose is to offer fellowships in all fields. Endowment (1956): \$45,000,000.

INFANTILE PARALYSIS, NATIONAL FOUNDATION FOR: Founded 1938 by Franklin D. Roosevelt, with Basil O'Connor (volunteer president) and friends to direct fight on infantile paralysis. Funds raised by "March of Dimes." Financed research resulting in development of Salk vaccine, 1953-55.

KELLOGG FOUNDATION: Founded 1930 by W. K. Kellogg. Operates by making grants supporting experimental programs in health, agricultural and educational fields. Assets (Aug. 31, 1956): \$72,107,247, book value; \$128,670,144, market value.

KIWANIS INTERNATIONAL: Founded 1915 to render service to youth, community and nation. Clubs are located in U.S., Canada, Alaska and Hawaii.

KNIGHTS OF COLUMBUS: Founded 1882. Purpose is to render pecuniary aid to its sick, disabled and needy members; promotes social and intellectual intercourse among its members and conducts educational, charitable, social, relief and religious work.

KNIGHTS OF PYTHIAS: Founded 1864. Purpose is to promote social and fraternal well-being of its members. Auxiliary bodies: Dramatic Order of Knights Khorassan, Junior Order of Princes of Syracuse, Order of Pythian Sisters.

LEAGUE OF WOMEN VOTERS: Founded in 1920 upon ratification of 19th Amendment to inform the electorate and increase citizen participation in government. Annual expenditure: about \$1,200,000.

LIONS CLUBS, INTERNATIONAL ASSOCIATION OF: Founded 1917. Purpose is to recognize community needs and develop means of meeting them directly or by co-operating with other agencies.

NATIONAL GEOGRAPHIC SOCIETY: Founded 1888. Purpose is to increase and diffuse geographic knowledge. Publishes monthly *National Geographic Magazine*.

ODD FELLOWS, INDEPENDENT ORDER OF: Introduced into U. S. in 1819. Purpose is to promote social relations and to provide benefits for members.

ROCKEFELLER FOUNDATION: Founded 1913 to promote well-being of mankind by grants for agencies in fields of medical education, biological and medical research, agriculture, social sciences and humanities. Assets (Dec. 31, 1956): \$613,153,147, market value.

ROTARY INTERNATIONAL: Founded 1905. Purpose is to foster the ideal of service in business and community life and promote international understanding.

RUSSELL SAGE FOUNDATION: Founded 1907 by Mrs. Russell Sage to improve social and living conditions in U. S. Program emphasizes social science research. Assets (Sept. 1955): \$22,000,000.

SLOAN FOUNDATION, INC., ALFRED P.: Founded 1934 by Alfred P. Sloan, Jr. Purpose is to increase and spread economic knowledge and promote basic research in science and other subjects. The Foundation established the School of Industrial Management at Massachusetts Institute of Technology and the Sloan-Kettering Institute for Cancer Research. Assets (Dec. 1956): \$148,202,000.

TWENTIETH CENTURY FUND: Founded 1919 by Edward A. Filene to promote research and public education on economic and social problems. Assets (Dec. 31, 1956): \$13,332,570.

YOUNG MEN'S CHRISTIAN ASSOCIATION: Founded 1844. Purpose is to improve spiritual, social, recreational and physical lives of young people. Endowment (1956): \$62,896,000.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION OF THE U.S.A.: Founded 1858 to advance physical, social, intellectual and spiritual interests of young women and to build fellowship of women devoted to pursuit of Christian ideals.

Longest Broadway Runs

Source: *Variety*.

1. Life with Father	3,224
2. Tobacco Road	3,182
3. Abie's Irish Rose	2,327
4. Oklahoma!	2,248
5. South Pacific	1,925
6. Harvey	1,775
7. Born Yesterday	1,642
8. The Voice of the Turtle	1,557
9. Arsenic and Old Lace	1,444
10. Helzapoppin	1,404

Top Grossing Films*

As of Jan. 2, 1957. Source: *Variety*.

1. Gone With the Wind	\$33,500,000
2. The Robe	17,000,000
3. Greatest Show on Earth	12,800,000
4. From Here to Eternity	12,500,000
5. This Is Cinerama	12,500,000
6. White Christmas	12,000,000
7. Duel in the Sun	11,300,000
8. Best Years of Our Lives	11,300,000
9. Quo Vadis	10,500,000
10. Cinerama Holiday	10,000,000

* Figures are rentals collected by film distributors from exhibitors in U.S. and Canada.

AMERICAN ECONOMY



ALTHOUGH WE account for only 6.3% of the world's population, we own almost 50% of its wealth. We make, grow, build, sell, buy and use more goods and services than any other country in the world. Of our population of over 170 million people, about 66 million are employed, and over 43 million are enrolled in our schools and colleges (1957). Each year we spend more than \$266 billion on personal goods and services, of which \$81 billion go for food, tobacco and alcohol alone. According to the American Automobile Association we spend \$12 billion on vacations every year. Our personal savings amount to over \$21 billion annually, in addition to

which 4 out of every 5 families are covered by life insurance. Of our 50 million dwelling units, 55% are occupied by their owners. The millions of acres of fertile farmland produce more food than we can eat. Our productive capacity is the largest in the world: we own 29% of the world's railroad mileage, 71% of its automobiles, 51% of its trucks, 52% of its radios, 41% of its electric power output, 40% of its steel. Our natural resources are tremendous: each year we produce 53% of the world's output of petroleum and about 30% of its coal. Our merchant fleets have outstripped Britain's, and we have the greatest volume of foreign trade.

Gross National Product or Expenditure (in millions of dollars)

Source: U. S. Department of Commerce.

Item	1929	1933	1938	1945	1948	1951	1956	1957*
Gross national product.....	104,436	55,964	85,227	213,558	257,325	328,232	414,686	429,100
GNP in constant (1947) dollars.....	149,300	103,700	145,900	263,100	243,900	282,900	332,000	338,000
Personal consumption expenditures.....	78,952	46,392	64,641	121,699	177,609	208,342	267,160	276,700
Durable goods.....	9,212	3,469	5,686	8,105	22,214	27,148	33,948	35,900
Nondurable goods.....	37,677	22,251	33,985	73,222	98,741	111,054	133,337	137,300
Services.....	32,063	20,672	24,970	40,372	56,654	70,140	99,875	103,400
Gross private domestic investment.....	16,231	1,391	6,661	10,430	41,176	56,864	65,923	62,700
New construction.....	8,707	1,431	3,960	3,833	17,904	23,332	33,276	32,800
Producers' durable equipment.....	5,850	1,589	3,644	7,654	19,110	23,177	28,093	30,700
Change in business inventories.....	1,674	-1,629	-943	-1,057	4,162	10,355	4,554	-800
Net foreign investment.....	771	150	1,109	-1,438	1,956	227	1,376	4,100
Government purchases.....	8,482	8,031	12,816	82,867	36,584	62,799	80,227	85,600
Federal.....	1,311	2,018	5,280	75,923	21,019	40,995	47,199	50,300†
National security.....	1,344	2,022	5,286	.....	15,984	37,260	42,405	45,500
Other.....					5,570	4,154	5,192	.....
Less: Government sales.....					535	419	398	.....
State and local.....	7,171	6,013	7,536	8,071	15,565	21,804	33,028	35,300

* First quarter, revised. † Less government sales.

National Income by Distributive Shares (in millions of dollars)

Source: U. S. Department of Commerce.

Type of share	1929	1933	1939	1945	1948	1951	1953	1956	1956 % of total
National income.....	87,814	40,159	72,753	181,248	221,641	277,041	302,129	343,620	100.0
Compensation of employees.....	51,085	29,539	48,108	123,181	140,927	180,420	208,069	241,372	70.3
Wages and salaries.....	50,423	28,997	45,941	117,577	135,172	170,881	197,287	227,237	66.2
Supplements to wages and salaries.....	662	542	2,167	5,604	5,755	9,539	10,782	14,135	4.1
Income of unincorporated enterprises and inventory valuation adjustment.....	14,759	5,599	11,610	30,835	38,389	40,809	39,171	39,617	11.5
Business and professional.....	8,791	3,166	7,293	19,011	21,649	24,791	25,908	28,017	8.2
Farm.....	5,968	2,433	4,317	11,824	16,740	16,018	13,263	11,600	3.3
Rental income of persons.....	5,425	1,971	2,742	5,634	7,198	9,129	10,152	10,322	3.0
Corporate profits and inventory valuation adjustment.....	10,100	-1,992	5,689	18,413	30,619	39,913	36,042	40,449	11.8
Net interest.....	6,445	5,042	4,604	3,185	4,508	6,770	8,695	11,860	3.4

How Consumers Spend Their Dollar

Source: U. S. Department of Commerce.

Group	(in millions of dollars)									1956 % of total
	1929	1932	1939	1945	1947	1949	1950	1953	1956	
Food, alcohol and tobacco	21,374	12,719	21,072	45,924	60,483	63,145	65,606	77,188	86,367	32.3
Clothing, accessories, and jewelry	11,018	5,973	8,299	20,247	23,144	23,007	23,062	24,665	27,017	10.1
Personal care	1,116	817	1,004	2,077	2,261	2,216	2,303	2,728	3,581	1.3
Housing	11,421	8,964	8,940	12,205	14,603	18,080	20,210	27,572	32,841	12.4
Household operation	10,509	6,675	9,461	14,865	22,717	23,540	26,412	30,190	36,113	13.5
Medical care and death expenses	3,620	2,575	3,386	5,902	7,812	8,885	9,518	11,266	13,405	5.0
Personal business	5,221	3,111	3,725	4,787	6,232	7,576	8,706	10,659	13,968	5.3
Transportation	7,496	3,924	6,250	6,694	14,876	19,274	22,570	26,994	30,314	11.3
Recreation	4,327	2,439	3,446	6,314	9,733	10,276	11,347	11,832	13,844	5.2
Private education and research	664	571	628	871	1,316	1,663	1,794	2,444	3,565	1.3
Religious and welfare activities	1,196	973	938	1,572	1,589	1,762	1,859	2,978	3,746	1.4
Foreign travel and remittances—net	799	467	317	1,621	804	1,164	1,163	2,026	2,399	0.9
Total consumer outlay	78,761	49,208	67,466	123,079	165,570	180,588	194,550	230,542	267,160	100.0

Consumers' Price Index (1947-49 = 100)

Source: U. S. Bureau of Labor Statistics.

Items	1947	1948	1951	1953	1956	1957*
All items	95.5	102.8	111.0	114.4	116.2	118.8
Total food	95.9	104.1	112.6	112.8	111.7	113.4
Apparel	97.1	103.5	106.9	104.8	105.5	106.5
Housing total	95.0	101.7	112.4	117.7	121.7	124.6
Rent	94.4	100.7	113.1	124.1	132.7	134.3
Gas and electricity	97.6	100.0	103.1	106.6	111.8	112.4
Solid fuels and fuel oil	88.8	104.4	116.4	123.9	130.7	138.9
Housefurnishings	97.2	103.2	111.2	107.9	103.0	104.8
Household operation	97.2	102.6	109.0	115.3	122.9	126.9
Transportation	90.6	100.9	118.4	129.7	128.7	134.7
Medical care	94.9	100.9	111.1	121.3	132.6	136.1
Personal care	97.6	101.3	110.5	112.8	120.0	122.7
Reading and recreation	95.5	100.4	106.5	108.0	108.1	110.6
Other goods and services	96.1	100.5	109.7	118.2	122.0	124.1

* Average of first 4 months.

U. S. Consumption of Principal Foods*

(in pounds per capita)

Source: U. S. Department of Agriculture.

Foods	1935-39 avg.	1947-49 avg.	1957*
Red meats	125.3	146.4	159.0
Poultry meats	15.3	21.7	30.7
Eggs ¹	296.0	380.0	356.0
Fluid milk and cream	330.0	359.0	356.0
Cheese	5.5	6.9	8.1
Butter	16.8	10.5	8.8
Margarine	2.8	5.5	8.2
Fats and oils ²	28.9	28.9	31.5
Fresh fruits	137.1	130.3	98.0
Processed fruits ⁴	25.1	41.5	47.6
Fresh vegetables	139.0	150.0	132.0
Processed vegs. ⁴	30.0	41.4	43.0
Potatoes, sweetpots	149.3	124.3	108.0
Sugar	96.7	93.5	97.7
Corn products	37.4	33.5	31.6
Wheat flour	157.0	135.0	119.0
Coffee	13.9	18.0	15.7
Cocoa	4.3	4.0	4.1

¹ Number, not pounds. ² Excludes butter and margarine. ³ Preliminary estimates. ⁴ Pack year. * Civilian consumption only.

Consumer Credit

(in millions of dollars)

Source: Federal Reserve Board.

End of year	Installment credit*				Charge accounts
	Total	Installment credit	Non-installment credit*	Charge accounts	
1929	6,444	3,151	1,691	1,602	
1932	3,567	1,521	1,026	1,020	
1935	4,911	2,694	1,034	1,183	
1939	7,222	4,503	1,305	1,414	
1940	8,338	5,514	1,353	1,471	
1943	4,901	2,136	1,325	1,440	
1944	5,665	2,462	1,591	1,612	
1946	8,384	4,172	2,136	2,076	
1949	17,305	11,590	2,920	2,795	
1950	21,395	14,703	3,401	3,291	
1952	27,401	19,403	3,987	4,011	
1953	31,243	23,005	4,114	4,124	
1955	38,648	29,020	5,084	4,544	
1956	41,863	31,552	5,609	4,702	
1957†	41,015	31,532	5,796	3,687	

* Single payment loans and service credit. † End of April, preliminary.

Minutes of Working Time Required for Purchase of Selected Consumer Items October 1955

Source: National Industrial Conference Board.

Food	U.S. ¹	Austria ²	Belgium ³	Denmark ⁴	France ⁵	West Germany	Italy ⁶	U.K. ⁷	Canada ⁸	Mexico ⁹	Japan ¹⁰	Philippines ¹¹	U.S.S.R.
Flour, wheat (1 kg.).....	7	32	35	14	43	25	42	18	7	36	44	93	59
Rice (1 kg.).....	12	56	41	31	70	33	51	...	...	60	71	27	200
Bread, white (1 kg.).....	12	43	17	20	27	30	44	12	12	50	51	52	51
Beef, sirloin (1 kg.).....	34	286	253	96	309	156	329	145	75	188	350	261	290
Pork, loin chops (1 kg.).....	56	233	191	108	211	172	350	139	63	260	378	137	369
Fresh fish (1 kg.) misc. types	29	158	130	26	83	57	278	62	34	191	95	140	297
Butter (1 kg.).....	49	257	216	105	332	225	403	127	58	327	598	329	462
Milk, pasteurized (1 liter)...	7	25	16	8	18	13	29	15	8	33	59	55	41
Eggs, fresh (one).....	2	10	8	5	11	8	13	7	3	13	11	7	12
Apples, eating (1 kg.).....	9	23	24	23	42	34	41	36	9	88	...	99	196
Cabbage (1 kg.).....	5	12	9	6	16	9	...	13	5	48	20	31	81
Potatoes (1 kg.).....	3	8	5	7	7	6	13	9	3	31	16	65	20
Coffee (500 gr.).....	32	304	147	124	194	340	298	...	49	150	...	44	501 ¹²
Tea (500 gr.).....	47 ¹³	395	308	194	586	518	468	113	57	920	155	311	940
Oleomargarine (1 kg.).....	20	106	55	40	129	65	...	56	30	172	279	107	334
Sugar (1 kg.).....	7	45	27	13	42	44	83	22	8	27	129	23	324
Cigarettes (20).....	7	35	21	45	33	54	51	54	14	12	32	37	...
Electricity, lighting (1 kwh.)	2	4	8	1	11	7	14	2	1	7	9	6	...
Coal (50 kg.).....	44	378	234	127	348	115	738	96	54	448	398	...	...

¹ 46 cities. ² Vienna. ³ 3 cities. ⁴ Copenhagen. ⁵ 4 cities. ⁶ 8 large cities. ⁷ 7 cities. ⁸ 33 cities. ⁹ Mexico City.
¹⁰ 5 cities. ¹¹ Manila. ¹² 1952 figures. ¹³ Estimated.

New Construction Activity, by Type (in millions of dollars)

Source: U. S. Department of Commerce and U. S. Department of Labor.

Activity	1929	1933	1940	1945	1949	1955	1956
Total new construction activity.....	10,793	2,879	8,682	5,633	22,789	44,581	46,060
New private construction activity.....	8,307	1,231	5,504	3,235	16,384	32,620	33,242
Residential (nonfarm).....	3,625	470	2,985	1,100	8,267	18,705	17,632
New dwelling units.....	3,040	290	2,560	720	7,257	14,990	13,490
Additions and alterations.....	340	145	335	340	825	3,376	3,695
Nonhousekeeping.....	245	35	90	40	185	339	447
Nonresidential building, except farm and public utility..	2,694	406	1,025	1,020	3,228	7,611	8,817
Industrial.....	949	176	442	642	972	2,399	3,084
Commercial ¹	1,135	130	348	203	1,027	3,218	3,631
Other.....	610	100	235	175	1,229	1,907	2,102
Public utility.....	1,578	261	771	827	3,323	4,543	5,113
Railroad.....	510	94	167	264	352	374	427
Telephone and telegraph.....	354	45	122	117	533	805	1,066
Other public utility.....	714	115	482	446	2,438	3,364	3,620
Farm construction.....	307	49	240	267	1,488	1,600	1,560
All other private.....	103	45	33	21	78	161	120
New public construction activity.....	2,486	1,648	3,628	2,398	6,405	11,961	12,818
Residential.....	...	...	200	80	359	266	292
Nonresidential building.....	659	230	615	937	2,068	4,218	4,072
Industrial.....	...	2	164	755	177	721	453
Educational.....	389	52	156	59	934	2,442	2,549
Hospital and institutional.....	101	49	54	85	477	322	362
Other.....	169	127	241	38	480	733	772
Military and Naval.....	19	36	385	690	137	1,313	1,395
Highway.....	1,266	847	1,302	398	2,131	4,050	4,470
Sewer and water.....	253	95	338	97	619	1,085	1,275
Conservation and development.....	115	359	528	130	793	701	826
All other ²	23	16	260	66	298	328	488

¹ Warehouses, office and loft buildings; stores, restaurants and garages. ² Miscellaneous public service enterprises and all Federal not included elsewhere.

Number of Nonfarm Houses Built*

Source: U. S. Bureau of Labor Statistics, National Bureau of Economic Research.

Year	Houses	Year	Houses
1900.....	204,000	1944.....	169,000
1910.....	475,000	1945.....	226,000
1920.....	247,000	1949.....	1,025,100
1929.....	509,000	1950.....	1,396,000
1933.....	93,000	1952.....	1,127,000
1937.....	336,000	1953.....	1,103,800
1939.....	515,000	1956.....	1,118,000
1943.....	350,000		

* Data represents new dwelling units started.

Monthly Average Railroad Carloadings

(in thousands of cars)

Source: Association of American Railroads.

Year	Total	Year	Total
1920.....	3,760	1947.....	3,708
1925.....	4,269	1948.....	3,643
1929.....	4,402	1949.....	2,992
1932.....	2,348	1950.....	3,242
1939.....	2,826	1951.....	3,437
1940.....	3,030	1952.....	3,165
1942.....	3,564	1953.....	3,192
1943.....	3,535	1955.....	3,157
1944.....	3,617	1956.....	3,153
1945.....	3,492	1957*	2,842

* First 5 months.

Industrial Production Indexes, by Groups

(1947-49 average = 100)

Source: Board of Governors of the Federal Reserve System.

Industry	1950	1951	1956	1957*	Industry	1950	1951	1956	1957*
Durable manufactures.....	116	128	159	162	Leather and products.....	101	94	104	106
Ferrous metals.....	114	129	138†	140†	Paper and allied products.....	118	125	159	158
Nonferrous metals.....	116	116			Printing and publishing.....	111	113	136	141
Fabricated metal products.....	115	122	135	138	Chemicals and allied products.....	121	136	177	183
Machinery.....	114	130	171	172	Petroleum and coal products.....	110	122	141	143
Transportation equipment.....	120	135	199	221	Food and beverage products.....	103	105	113	112
Instruments and related products.....	114	128	166	173	Tobacco manufactures.....	101	107	107	113
Stone, clay and glass products.....	118	131	158	155	Total manufactures.....	113	121	144	147
Lumber and products.....	113	113	123	113	Minerals.....	105	115	129	131
Furniture and misc.....	117	116	135	131	Fuels.....	103	114	129	131
Nondurable manufactures.....	111	114	129	131	Metals, stone and earth.....	111	121	127	131
Textile mill products.....	111	107	104	100	Total industrial production.....	112	120	143	145
Apparel and allied products.....	108	105	112	110					
Rubber products.....	119	119	133	122					

* Average of first 4 months, seasonally adjusted, preliminary. † All primary metal manufacturing.

Electric Energy Output of Utilities*

(in millions of kilowatt hours)

Source: Federal Power Commission.

Year	Total	Ownership						Source of energy	
		Privately owned	Publicly owned	Municipal	Federal	Co-operatives, power districts, state projects	% Public to total	Fuels	Fuels as % of total
1920.....	39,405	37,716	1,689	1,373	58	94	4.3	23,644	60.0
1929.....	92,180	87,514	4,667	3,498	300	451	5.1	59,533	64.6
1933.....	81,740	76,668	5,072	3,583	458	654	6.2	48,283	59.1
1939.....	127,642	115,078	12,564	5,688	5,476	944	9.8	84,078	65.9
1943.....	217,759	180,247	37,511	9,223	24,485	3,156	17.2	144,127	66.2
1951.....	370,673	301,845	68,828	17,617	44,120	6,204	18.6	270,922	73.1
1953.....	442,665	354,272	88,393	21,625	58,064	8,704	20.0	337,431	76.2
1955.....	547,037	420,869	126,169	25,852	89,064	11,253	23.1	434,063	79.3
1956.....	600,668	459,015	141,653	28,006	100,710	12,937	23.6	478,639	79.7

* Output by industrial establishments was as follows (in millions of kilowatt hours): 1939—83,667; 1943—49,781; 1951—62,685; 1953—71,605; 1955—81,972; 1956, prelim.—83,303

Fuel Production

Source: U. S. Dept. of Interior, U. S. Dept. of Commerce, and American Gas Association.

Year	Coke, in thousands of short tons	Anthracite coal, in thousands of short tons	Bituminous coal, in thousands of short tons	Natural gas, in millions of therms (produced and marketed) ¹	Manufactured gas, in millions of therms ²	Crude petroleum, in thousands of 42-gal. barrels
1929.....	59,884	73,828	534,989	20,490 ³	2,070 ³	1,007,323
1933.....	27,589	49,541	333,631	16,640 ³	1,820	905,656
1939.....	44,327	51,487	394,855	26,220	1,830	1,264,962
1941.....	65,187	56,368	514,149	29,780	1,990	1,402,228
1945.....	67,308	54,934	577,617	41,960	2,600	1,713,655
1949.....	63,637	42,702	437,868	55,770	2,680	1,841,940
1951.....	79,331	42,670	533,645	76,660	2,435	2,244,529
1953.....	78,467	30,023	453,000	90,270	1,756	2,359,998
1954.....	64,327	27,118	389,514	93,987	1,504	2,308,110
1955.....	80,820	26,364	470,004	101,104	1,571	2,484,516
1956.....	81,498	28,578	500,505	108,296	1,434	2,617,432

¹ Includes all natural gas in sales of natural gas mixed with manufactured gas. ² Includes all manufactured gas products produced and purchased by gas utilities. ³ Estimated.

Metals Production (in short tons)

Source: American Iron & Steel Institute, Iron Age, American Zinc Institute, American Bureau of Metal Statistics and U. S. Bureau of Mines.

Year	Pig iron and ferroalloys	Steel ingots and castings	Rolled iron and steel products		Aluminum (primary)	Copper (smelter output from domestic ore)	Zinc (slab smelter output, all grades)*	Refined lead (from domestic ore; anti-monial lead excluded)
			Total	Plates and sheets				
1929.....	47,727,661	63,205,450	45,997,746	13,928,670	113,986	1,001,432	631,601	672,498
1932.....	9,835,227	15,322,901	11,705,219	3,956,505	52,444	272,005	213,531	255,337
1939.....	35,677,097	52,798,714	39,067,553	13,931,919	163,545	712,675	538,198	420,967
1941.....	56,686,604	82,839,259	62,324,187	20,293,071	309,667	966,072	863,955	470,517
1943.....	62,769,947	88,836,512	63,292,673	22,543,040	920,179	1,092,939	971,873	406,544
1945.....	54,919,029	79,701,648	59,811,669	19,314,316	495,060	722,894	799,520	356,535
1948.....	61,911,559	88,640,470	69,191,952	25,654,480	623,456	834,813	850,105	339,413
1949.....	54,916,785	77,978,176	60,882,387	23,470,886	603,462	752,750	870,113	404,449
1951.....	72,448,543	105,199,848	81,911,320	31,869,683	836,881	928,330	931,833	342,644
1952.....	63,353,955	93,168,039	71,348,528	27,251,852	937,331	925,359	961,430	383,358
1953.....	77,250,168	111,609,719	85,943,724	35,699,732	1,252,013	926,448	971,191	328,012
1954.....	59,806,242	88,311,652	68,464,640	28,406,447	1,460,565	835,472	868,242	322,271
1955.....	79,263,865	117,036,085	90,657,553	39,708,255	1,565,721	1,014,442	1,031,018	321,132
1956.....	77,575,458	115,216,149	89,284,317	38,709,832	1,678,954	1,114,285	1,062,954	340,000†

* From 1940 includes both foreign and domestic ores. † Preliminary.

Business Population
(in thousands of concerns)

Source: U. S. Department of Commerce, Dun & Bradstreet.

Item	1929	1933	1941	1943	1946	1947	1949	1951	1953	1956
Total operating businesses ¹	3,029.0	2,782.1	3,269.6	2,905.1	3,487.2	3,783.2	4,000.0	4,108.5	4,205.7	4,301.0
Manufacturing.....	257.0	166.8	236.6	244.9	285.9	312.0	320.5	327.2	326.6	307.0
Wholesale trade.....	148.1	141.8	194.4	172.6	229.2	250.9	261.8	273.1	285.0	293.0
Retail trade.....	1,327.0	1,291.2	1,558.3	1,329.1	1,555.4	1,685.9	1,794.3	1,834.0	1,859.2	1,894.0
Service industries.....	590.9	574.9	614.4	553.6	656.5	711.5	736.8	735.5	741.9	754.0
Contract construction.....	233.8	185.4	186.4	157.2	243.8	292.6	347.5	388.6	432.3	475.0
All other ²	472.0	422.1	479.5	447.7	520.3	530.3	539.1	543.0	560.6	578.0
New entrants ³	(³)	(³)	290.0	146.0	617.4	460.8	331.1	363.2	340.5	380.8
Discontinued businesses ⁴	(³)	(³)	270.7	337.0	208.7	239.2	306.5	309.3	334.0	327.0
Commercial & industrial failures ⁵	22.9	19.9	11.8	3.2	1.1	3.5	9.2	8.1	8.9	12.7

¹ 1929-51, annual average; 1953-54, as of June 30. ² Annual totals. ³ Not available. ⁴ Closures resulting in a known loss to creditors. ⁵ Includes transportation, communications, public utilities, finance, insurance, real estate, and mining and quarrying.

Consumer Durable Goods Output

Source: Electrical Merchandising; MART Magazine, Caldwell-Clements, Inc., Radio-Electronics-Television Manufacturers Association; Automobile Manufacturers Association.

Year	Electric clothes washers		Electric ranges		Electric vacuum cleaners		Electric refrigerators		Radio sets		Television sets		Passenger cars	
	Number sold, in thou- sands	Average in retail price	Number sold, in thou- sands	Average in retail price	Number sold, in thou- sands	Average in retail price	Number sold, in thou- sands	Average in retail price	Number sold, in thou- sands	Average in retail price	Number sold, in thou- sands	Average in retail price	Factory sales, in thou- sands	Average in factory price
1900.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	\$1,229
1910.....	3 ¹	\$ 75 ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	181	1,190
1920.....	600	120	40	.....	1,024	\$50	5 ⁴	\$550 ⁴	100 ⁵	\$50 ⁵	.....	.....	1,906	949
1925.....	736	141	85	\$176	1,056	62	75	425	2,000	83	.....	.....	3,735	658
1929.....	956	113	173	165	1,253	50	778	292	4,428	136	.....	.....	4,587	621
1932.....	570	59	60	150	447	40	798	195	3,000	47	.....	.....	1,135	545
1937.....	1,465	72	405	134	1,210	56	2,310	171	8,065	56	.....	.....	3,916	573
1941.....	1,892	79	728	142	1,670	56	3,500	155	13,000	35	.....	.....	3,780	679
1945.....	251 ⁴	.....	74	.....	258 ⁵	.....	264	.....	500	40	.....	.....	70	818
1946.....	2,047	121	577	186	2,290	68	2,100	207	14,031	50	7	\$323	2,149	921
1948.....	4,196	173	1,600	235	3,361	77	4,766	260	12,260	52	975	393	3,909	1,220
1949.....	3,065	171	1,056	230	2,890	77	4,450	255	7,805	42	3,000	323	5,119	.....
1950.....	4,273	184	1,830	233	3,529	79	6,200	258	9,849	44	7,464	300	6,666	.....
1952.....	3,267	217	1,400	245	2,842	92	4,075	275	7,692	34	5,385	308	4,321	.....
1955.....	4,387	235	1,600	263	3,330	88	4,025	315	7,800	32	7,905	231	7,920	.....
1956.....	4,713	275	1,200	255	3,725	82	3,700	325	9,200	32	7,200	190	5,816	.....

¹ 1909. ² Includes gas engine washers. ³ Includes hand cleaners. ⁴ 1921. ⁵ 1922.

Wood Pulp, Paper and Lumber

Source: U. S. Bureau of the Census and National Lumber Manufacturers Assn.

Expenditures for New Plant and

Equipment*

(in millions of dollars)

Source: Securities and Exchange Commission and U. S. Department of Commerce.

Year	Wood pulp (in thousands of short tons)	Paper and paperboard (in thousands of short tons)	Lumber (in millions of board feet)
1919.....	3,518	6,098	34,552
1929.....	4,863	11,140	36,886
1939.....	6,993	13,510	25,148
1941*.....	10,011	17,934	33,613
1943.....	9,060	17,036	34,289
1945.....	10,167	17,371	28,122
1947.....	11,946	21,114	35,404
1948.....	12,872	21,897	36,762
1949.....	12,207	20,315	32,901
1950.....	14,849	24,375	38,902
1952.....	16,473	24,418	37,462
1953.....	17,537	26,540	36,742
1954.....	18,341	26,657	37,329†
1955.....	20,829	29,892	39,108†
1956†.....	22,129	31,333	37,526†

* Coverage for paper and paperboard increased in 1941.
† Subject to revision. † Preliminary.

Year	Manufacturing and mining	Transportation	All other†	Total
1939.....	2,269	645	2,598	5,512
1945.....	4,366	1,122	3,204	8,692
1946.....	7,217	1,506	6,125	14,848
1947.....	9,394	2,187	9,031	20,612
1948.....	10,016	2,604	9,439	22,059
1949.....	7,941	2,239	9,105	19,285
1950.....	8,198	2,323	10,084	20,605
1952.....	12,617	2,896	10,980	26,493
1954.....	12,013	2,366	12,448	26,827
1955.....	12,396	2,525	13,780	28,701
1956.....	16,195	2,943	15,943	35,081
1957†.....	16,851	3,223	16,045	37,200

* Data exclude agriculture. † Includes electric and gas utilities, trade, service, communications, construction and finance. † First 3 quarters, estimated.

Industrial Production Indexes for Western Europe

Source: United Nations.

(1953 = 100)

Country	1948	1950	1955	1956	Country	1948	1950	1955	1956
Austria.....	54	86	133	138	Italy.....	62	79	118	128
Belgium.....	88	90	116	122	Luxembourg.....	91	92	116	126
Denmark.....	82	98	112	111	Netherlands.....	71	88	118	124
France.....	81	88	121	133	Norway.....	70	87	117	122
Germany (Fed. Rep.)..	40	72	129	139	Sweden.....	90	97	111	114
Greece.....	52	78	130	145	United Kingdom....	83	94	113	112
Ireland.....	70	91	107	102					

Employment and Unemployment (in millions of persons)

Sources: U. S. Bureau of Labor Statistics, U. S. Bureau of the Census, and U. S. Bureau of Agricultural Economics.

Activity	1929	1932	1941	1943	1945	1950	1953	1956	1957 ¹
Total employment.....	46.7	37.9	50.4	54.5	52.8	60.0	61.9	65.3	63.5
Non-agricultural employment.....	36.8	26.3	41.3	45.4	44.2	52.5	55.4	55.6	58.1
Manufacturing.....	10.5	6.8	13.0	17.4	15.2	14.9	17.3	16.8	16.9
Durable goods.....	...	...	...	6.5	6.3	8.0	10.1	9.8	9.9
Nondurable goods.....	...	...	...	10.9	8.9	6.9	7.2	7.0	7.0
Mining.....	1.1	0.7	.9	.9	.8	.9	.8	0.8	0.8
Construction.....	1.5	1.0	1.8	1.6	1.1	2.3	2.6	3.0	2.8
Transportation and public utilities.....	3.9	2.8	3.2	3.6	3.9	4.0	4.2	4.1	4.1
Trade.....	6.4	4.9	7.6	7.3	7.7	9.5	10.5	11.1	11.1
Retail.....	...	...	...	5.7	5.9	7.0	7.7	8.2	8.1
Wholesale.....	...	...	...	1.6	1.8	2.5	2.8	2.9	3.0
Finance.....	1.4	1.3	1.5	1.4	1.4	1.8	2.0	2.3	2.3
Service.....	3.1	2.7	3.6	3.8	3.9	4.8	5.5	6.0	6.0
Government.....	3.1	3.2	4.6	6.0	6.0	5.9	6.6	7.2	7.4
Other, self-employed, domestic.....	6.9	5.1	5.1	3.4	4.2	8.4	5.9	(²)	(²)
Agricultural employment.....	9.9	9.6	9.1	9.1	8.6	7.5	6.5	6.8	5.3
Unemployment.....	2.0	12.7	5.5	1.1	1.1	3.1	1.5	2.6	2.9
Total civilian labor force.....	48.7	50.6	55.9	55.5	53.9	63.1	63.4	67.9	66.5
Armed forces.....	.3	.3	1.5	8.9	11.3	1.5	(²)	2.8	2.8
Total labor force.....	49.0	50.9	57.4 ³	64.4	65.2	64.6	67.0	70.8	69.3

¹ Average of first 4 months not adjusted for seasonal variation. ² Includes 1.9 million employed in public works.
³ Data not available. ⁴ Included in services, transportation and public utilities and retail trade.

Average Earnings and Hours Worked Per Week in Manufacturing Industries

Source: U. S. Department of Labor.

Industry	1947		1949		1951		1953		1956		1957 ²	
	Earn- ings	Hours worked	Earn- ings	Hours worked	Earn- ings	Hours worked	Earn- ings	Hours worked	Earn- ings	Hours worked	Earn- ings	Hours worked
All manufacturing ¹	\$54.14	40.1	\$54.92	39.2	\$64.71	40.7	\$71.69	40.5	\$80.19	40.5	\$82.34	40.2
Durable goods.....	57.11	40.5	58.03	39.5	69.47	41.6	77.23	41.3	86.31	41.1	88.88	40.8
Primary metal industries.....	61.03	40.1	60.78	38.3	75.12	41.5	84.25	40.9	96.76	41.0	99.67	40.5
Iron and steel foundries.....	58.45	40.7	55.09	37.2	71.66	42.4	76.33	40.6	86.72	41.1	87.39	39.9
Nonferrous foundries.....	59.96	40.0	60.92	39.0	73.74	41.9	80.97	41.1	89.57	40.9	91.28	40.6
Fabricated metal products.....	56.68	40.6	57.82	39.6	68.81	41.7	77.15	41.7	85.28	41.2	87.39	40.9
Hand tools.....	56.07	40.9	54.54	38.6	69.70	42.5	74.70	41.5	82.62	40.9	82.93	40.0
Hardware.....	54.26	40.4	56.28	39.3	66.49	41.3	75.89	41.7	83.44	40.7	86.65	40.4
Structural metal products.....	58.17	41.2	59.90	40.5	71.49	42.3	80.75	42.5	88.19	41.6	91.47	41.8
Electrical machinery.....	55.66	40.1	56.96	39.5	64.84	41.3	71.81	40.8	80.78	40.8	83.29	40.5
Machinery, except electrical.....	60.52	41.2	60.44	39.5	76.38	43.4	82.91	42.3	93.26	42.2	94.96	41.8
Transportation equipment.....	61.58	39.0	64.95	39.2	75.67	40.9	85.28	41.2	94.71	41.0	98.20	41.2
Automobiles.....	61.86	38.4	65.97	38.9	75.45	39.5	87.95	41.1	95.11	40.3	98.32	40.5
Lumber and wood products.....	51.38	41.5	51.72	40.6	59.98	40.8	65.93	40.7	70.93	40.3	68.38	39.3
Furniture & fixtures.....	48.99	41.1	49.48	40.1	57.27	41.2	63.14	41.0	68.95	40.8	68.97	40.1
Stone, clay and glass.....	53.46	40.9	54.45	39.8	63.91	41.5	70.35	40.9	80.15	41.1	81.34	40.5
Nondurable goods.....	50.61	39.6	51.41	38.8	58.46	39.5	63.60	39.5	71.68	39.6	73.10	39.2
Textile—mill products.....	45.59	39.2	44.83	37.7	51.60	38.8	53.57	39.1	57.42	39.6	58.50	39.0
Cotton, silk, synthetic fibers.....	44.36	39.4	42.89	37.2	50.70	39.3	51.09	39.3	54.80	40.0	55.55	38.9
Woolen and worsted goods.....	52.45	40.1	51.19	38.9	57.87	39.1	61.93	39.7	65.16	41.5	65.95	41.1
Apparel and other finished textiles.....	42.79	36.2	41.89	35.8	46.31	35.9	48.41	36.4	52.27	36.3	53.77	36.3
Leather.....	41.66	37.2	41.61	36.6	46.86	36.9	51.65	37.7	56.40	37.6	58.42	38.1
Food.....	51.87	42.0	53.58	41.5	59.92	41.9	66.33	41.2	76.04	41.1	77.92	40.2
Tobacco.....	36.50	38.1	37.25	37.1	43.51	38.5	47.37	38.2	56.26	38.8	57.34	38.1
Paper.....	55.25	42.8	55.96	41.7	65.51	43.1	72.67	43.0	83.03	42.8	84.59	42.4
Printing and publishing.....	66.73	39.3	70.28	38.7	77.21	38.8	85.58	38.9	93.90	38.8	95.14	38.5
Chemicals.....	56.23	41.5	58.63	41.0	67.81	41.6	75.58	41.3	86.73	41.3	88.71	41.1
Petroleum and coal.....	69.23	40.7	72.36	40.4	80.98	40.9	90.17	40.8	104.39	41.1	105.22	40.8
Rubber.....	56.78	39.0	57.79	38.3	68.61	40.6	77.78	40.3	87.23	40.2	91.06	40.8

¹ Average weekly earnings in 1919 = \$23.29, 1929 = \$26.40, 1932 = \$17.86, 1939 = \$24.23. Average hours worked per week in 1914 = 61.0, 1919 = 47.8, 1929 = 45.7, 1932 = 38.2, 1939 = 37.7. ² Average of first three months.

Average Earnings and Hours Worked Per Week in Nonmanufacturing Industries

Source: U. S. Department of Labor.

Industry	1947		1949		1951		1955		1956*	
	Earnings	Hours worked	Earnings	Hours worked	Earnings	Hours worked	Earnings	Hours worked	Earnings	Hours worked
Anthracite mining.....	\$62.77	37.7	\$56.78	30.2	\$66.66	30.3	\$84.50	33.4	\$87.58	33.3
Bituminous coal mining.....	66.59	40.7	63.28	32.6	77.79	35.2	96.26	37.6	105.94	37.7
Metalliferous mining.....	54.63	41.8	61.55	40.9	74.56	43.6	92.42	42.2	97.52	42.4
Quarrying and nonmetallic mining.....	50.54	45.0	56.38	43.3	67.05	45.0	80.99	44.5	85.63	44.6
Telephone.....	44.77	37.4	51.78	38.5	58.26	39.1	72.07	39.6	73.66	39.6
Telegraph.....	53.56	44.6	62.85	44.7	68.24	44.6	78.54	42.0	83.33	42.3
Gas and electric utilities.....	56.69	41.9	63.99	41.5	72.49	41.9	86.52	41.2	91.69	41.3
Street railways and busses.....	57.14	46.8	64.61	44.9	72.23	46.3	80.60	43.1	84.48	43.1
Wholesale trade.....	51.99	41.0	57.55	40.7	64.31	40.7	77.55	40.6	81.20	40.4
Retail trade.....	40.66	40.3	45.93	40.4	50.65	40.2	58.50	39.0	60.45	38.5
Hotels (year-round).....	29.36	45.2	32.84	44.2	35.42	43.2	41.09	41.5	42.13	40.9
Laundries.....	32.71	42.6	34.98	41.5	37.81	41.1	40.70	40.3	42.32	40.3
Dyeing and cleaning.....	38.30	41.9	40.71	41.2	43.99	41.5	47.40	39.5	49.90	39.6
Private building construction.....	63.13	37.6	70.95	36.7	81.47	37.2	96.30	36.1	101.92	36.4

* First 4 months average.

State and Local Government Employment and Payroll: Oct. 1956

Source: U. S. Department of Commerce.

Function	Employees (in thousands)	Payroll (in millions)	Function	Employees (in thousands)	Payroll (in millions)
Total all functions.....	5,275	\$1,565.7	Natural resources.....	129	\$ 35.3
Education, total.....	2,283	734.3	Sanitation.....	124	37.6
Public schools.....	1,911	635.6	Local parks and recreation.....	73	18.8
Institutions of higher learning.....	348	91.0	Housing and community redevelopment.....	27	8.4
Other.....	24	7.7	Employment security.....	46	16.0
Highways.....	492	138.7	State liquor stores.....	14	4.3
Public welfare.....	107	29.8	Local utilities, total.....	227	79.3
Health.....	75	21.9	General control.....	434	101.8
Hospitals.....	473	114.9	All other.....	285	80.2
Police.....	287	92.3			
Local fire protection.....	183	47.4			

Why Strikes?

Percentage of
total strikes

Major issues	1949	1950	1955	1956
Wages and hours.....	46.6	52.8	49.9	47.6
Union organization, wages and hours.....	6.0	5.6	12.5	8.6
Union organization.....	15.7	13.4	8.9	11.6
Recognition.....	10.8	9.9	1.2	7.9
Strengthening bargaining position.....	.5	.5	1.6	1.1
Closed or union shop.....	2.2	1.8	.3	2.0
Discrimination.....	1.8	.8	.5	0.3
Other.....	.4	.4	5.3	0.3
Other working conditions.....	25.0	22.0	22.3	22.5
Job security.....	12.6	12.2	10.5	10.9
Shop conditions and policies.....	9.7	7.8	10.1	10.1
Work load.....	2.1	1.5	1.2	1.4
Other.....	.6	.5	.5	0.1
Interunion or intraunion matters.....	5.8	5.3	6.9	8.3
Sympathy.....	1.4	1.0	1.6	1.8
Union rivalry or factionalism.....	1.5	1.6	1.3	0.7
Jurisdiction.....	2.6	2.5	4.0	5.6
Other.....	.3	.1	.1	0.2
Not reported.....	.9	.9	1.4	1.3
All issues.....	100.0	100.0	100.0	100.0

Strikes and Lockouts

Source: U. S. Bureau of Labor Statistics.

Year	Strikes and lockouts Number	Workers involved Number (thousands)	Man-days idle Number (thousands)
1885.....	695	258	n.a.
1890.....	1,897	373	n.a.
1895.....	1,255	407	n.a.
1900.....	1,839	568	n.a.
1905.....	2,186	302	n.a.
1915.....	1,593	n.a.	n.a.
1917.....	4,450	1,227	n.a.
1920.....	3,411	1,463	n.a.
1925.....	1,301	428	n.a.
1929.....	921	289	5,352
1930.....	637	183	3,317
1932.....	841	324	10,502
1933.....	1,695	1,168	16,872
1935.....	2,014	1,117	15,456
1939.....	2,613	1,171	17,812
1943.....	3,752	1,981	13,501
1945.....	4,750	3,470	38,025
1948.....	3,419	1,960	34,100
1949.....	3,606	3,030	50,500
1952.....	5,117	3,540	59,100
1955.....	4,320	2,650	28,200
1956.....	3,825	1,900	33,100

n.a. = not available.

Membership of Leading American Labor Unions, 1956

Source: Bureau of Labor Statistics, Directory of Labor Unions in the United States, 1967.

Name of Union	Affiliation	No. of Members
Amalgamated Clothing Workers.....	AFL-CIO	385,000
Amalgamated Meat Cutters and Butcher Workmen.....	AFL-CIO	310,000
American Federation of Musicians.....	AFL-CIO	256,851
Brotherhood of Locomotive Firemen and Enginemen.....	AFL-CIO	97,000
Brotherhood of Maintenance of Way Employees.....	AFL-CIO	225,000
Brotherhood of Painters, Decorators and Paperhangers.....	AFL-CIO	217,000
Brotherhood of Railroad Trainmen.....	Ind.	217,462
Brotherhood of Railway and Steamship Clerks.....	AFL-CIO	350,000
Building Service Employees' International Union.....	AFL-CIO	230,000
Communications Workers of America.....	AFL-CIO	259,000
Hotel & Restaurant Employees' International Alliance.....	AFL-CIO	441,000
International Association of Machinists.....	AFL-CIO	949,683
International Brotherhood of Boilermakers.....	AFL-CIO	150,750
International Brotherhood of Electrical Workers.....	AFL-CIO	675,000
International Brotherhood of Pulp, Sulphite and Papermill Workers.....	AFL-CIO	165,000
International Brotherhood of Teamsters.....	AFL-CIO	1,368,082
International Hod Carriers', Building and Common Laborers' Union.....	AFL-CIO	465,923
International Ladies' Garment Workers' Union.....	AFL-CIO	450,802
International Union of Mine, Mill and Smelter Workers.....	Ind.	100,000
International Union of Electrical, Radio & Machine Workers.....	AFL-CIO	397,412
International Union of Operating Engineers.....	AFL-CIO	200,000
Chemical & Atomic Workers.....	AFL-CIO	183,000
Retail Clerks.....	AFL-CIO	300,000
United Association of Plumbers and Steam Fitters.....	AFL-CIO	243,763
United Automobile, Aircraft & Agricultural Implement Workers.....	AFL-CIO	1,320,513
United Brotherhood of Carpenters and Joiners.....	AFL-CIO	850,000
United Electrical, Radio and Machine Workers.....	Ind.	100,000
United Mine Workers.....	Ind.	(¹)
United Rubber, Cork, Linoleum and Plastic Workers.....	AFL-CIO	178,017
United Steelworkers.....	AFL-CIO	1,250,000

¹ Not available.

Wholesale and Retail Trade: No. of Establishments, 1948 and 1954

Source: Bureau of Census, Department of Commerce.

Kind of business group	No. of establishments		Kind of business group	No. of establishments	
	1948	1954		1948	1954
Retail trade, total.....	1,771,317	1,721,650	Tobacco and products (except leaf).....	3,019	2,858
Food group.....	504,902	384,616	Dry goods, apparel.....	11,733	9,389
Eating and drinking places.....	346,677	319,657	Furniture, home furnishings.....	3,813	4,042
General merchandise group.....	52,741	76,198	Paper and its products.....	4,044	5,057
Apparel group.....	115,707	119,743	Farm products—raw materials...	2,594	3,853
Furniture, furnishings, appliance group.....	85,680	91,797	Automotive.....	14,693	15,540
Automotive group.....	86,194	85,953	Electrical goods.....	5,443	7,123
Gasoline service stations.....	188,301	181,747	Hardware, plumbing, heating...	5,901	6,183
Lumber, building, hardware group..	99,043	100,519	Lumber, construction materials...	5,890	10,314
Drug and proprietary stores.....	55,903	56,009	Machinery, equipment & supplies	21,430	12,693
Liquor.....	33,460	31,240	Metals, metalwork (except scrap)	1,803	3,235
Other retail stores.....	164,174	226,903	Waste materials.....	7,717	8,139
Wholesale trade, total.....	243,366	252,318	Other merchant wholesalers.....	15,688	18,505
Merchant wholesalers, total.....	146,518	165,153	Manufacturers' sales branches, offices.....	23,768	22,590
Groceries, confectionery, meats...	17,345	29,795	Petroleum bulk stations, terminals.	29,451	29,189
Farm products.....	13,539	3,853	Agents, brokers.....	24,361	22,131
Beer, wines, distilled spirits.....	7,195	7,309	Assemblers of farm products.....	19,268	13,255
Drugs, chemicals, allied products	4,671	4,579			

Retail Sales by Kind of Business Group

(in millions of dollars)

Source: U. S. Bureau of the Census.

Kind of business	1952		1953		1956	
	Amount	%	Amount	%	Amount	%
Durable-goods stores ¹	\$ 55,270	33.7	\$ 60,270	35.7	\$ 65,810	34.4
Automotive group.....	28,337	17.3	33,319	19.5	36,121	18.9
Motor-vehicle, other automotive dealers.....	26,383	16.1	31,499	18.4	34,061	17.8
Tire, battery, accessory dealers.....	1,944	1.2	1,820	1.1	2,060	1.1
Furniture and appliance group.....	8,926	5.4	9,125	5.3	10,667	5.6
Furniture, home furnishings stores.....	5,255	3.2	5,135	3.0	6,571	3.4
Household appliance, radio stores.....	3,671	2.2	3,990	2.3	4,096	2.2
Lumber, building, hardware group.....	10,200	6.2	10,421	6.1	11,161	5.8
Lumber, building-materials dealers.....	7,572	4.6	7,713	4.5	8,313	4.3
Hardware stores.....	2,628	1.6	2,708	1.6	2,848	1.5
Non-durable goods stores ¹	108,815	66.3	110,369	64.6	125,660	65.6
Apparel group.....	10,633	6.5	10,255	6.0	11,559	6.0
Men's and boys' wear stores.....	2,497	1.5	2,249	1.3	2,456	1.3
Women's apparel, accessory stores.....	4,233	2.6	4,089	2.4	4,540	2.4
Family and other apparel stores.....	2,210	1.3	2,181	1.3	2,117	1.1
Shoe stores.....	1,693	1.1	1,735	1.0	2,446	1.3
Drug and proprietary stores.....	4,717	2.9	4,789	2.8	5,775	3.0
Eating and drinking places.....	12,688	7.7	13,002	7.6	14,317	7.5
Food group ¹	39,771	24.2	40,777	23.9	45,965	24.0
Grocery stores.....	32,238	19.6	33,623	19.7	39,169	20.5
Gasoline service.....	9,976	6.1	10,536	6.2	13,737	7.2
General-merchandise group.....	18,694	11.4	19,005	11.1	20,762	10.8
Department stores, excluding mail order.....	10,277	6.3	10,370	6.0	11,227	5.9
Mail order (catalog sales).....	1,339	.8	1,327	.8	1,407	0.7
Variety stores.....	2,996	1.8	3,094	1.8	3,422	1.8
Other general merchandise stores.....	4,082	2.5	4,215	2.5	4,706	2.5
Liquor stores.....	3,165	1.9	3,324	1.9	3,941	2.1
All retail sales.....	164,085	100.0	170,742	100.0	191,470	100.0

¹ Sales of other durable-goods stores, other food stores and other non-durable goods stores not reported separately but included in totals.

Wholesale Price Indexes by Major Commodity Groups

(1947-49 = 100)

Source: U. S. Bureau of Labor Statistics.

Commodity	1948	1949	1951	1955	1956	1957*
All commodities.....	104.4	99.2	114.8	110.7	114.3	117.1
Farm products.....	107.3	92.8	113.4	89.6	88.4	89.5
Processed foods.....	106.1	95.7	111.4	101.7	101.7	105.0
Textile products & apparel.....	104.4	95.5	110.6	95.3	95.3	95.4
Hides, skins & leather products.....	102.1	96.9	120.3	93.8	99.3	99.1
Fuel, power & lighting materials.....	107.1	101.9	106.7	107.9	111.2	119.1
Chemicals & allied products.....	103.8	94.8	110.0	106.6	107.2	109.1
Rubber & products.....	102.1	98.9	148.0	143.8	145.8	144.7
Lumber & wood products.....	107.2	99.2	123.9	123.6	125.4	119.7
Pulp, paper & allied products.....	102.9	98.5	119.6	119.3	127.2	128.9
Metals & metal products.....	103.9	104.8	122.8	136.6	148.4	150.0
Machinery & motive products.....	100.9	106.6	119.0	128.4	137.8	145.0
Furniture & other household durables.....	101.4	103.1	114.1	115.9	119.1	121.5
Nonmetallic minerals—structural.....	101.7	104.4	113.6	124.2	129.6	135.1
Tobacco mfs. & bottled beverages.....	100.4	101.6	108.1	121.6	122.3	124.5
Miscellaneous.....	103.1	96.1	104.9	92.0	91.0	89.4

* As of May.

Sales of Leading Retail Outlets

Source: Moody's Manual of Industrials.

1956 Sales (in thousands)		1956 Sales (in thousands)	
DEPARTMENT STORES		DRUG STORES	
J. C. Penney Co.	\$1,291,867	Walgreen Co.	212,283
Allied Stores Corp.	615,773	Sterling Drug. Co.	177,731
Federated Department Stores	601,492	United-Rexall Drug., Inc.	155,633
May Department Stores Co.	521,444	People's Drug Store, Inc.	61,880
Macy's	398,261		
Gimbel Bros., Inc.	350,898	SHOE STORES	
Marshall Field & Co.	211,004	International Shoe Co.	266,814
		Bonn Shoe Co.	219,149
VARIETY STORES		Endicott Johnson Corp.	151,360
F. W. Woolworth Co.	806,198	Melville Shoe Co.	126,124
W. T. Grant Co.	380,915	Edison Bros. Stores, Inc.	91,140
S. S. Kresge Co.	366,355	A. S. Beck Shoe Corp.	72,221
G. C. Murphy Co.	204,829		
J. J. Newberry Co.	203,463	MAIL-ORDER HOUSES	
S. H. Kress & Co.	167,636	Sears, Roebuck & Co.	3,555,684
McCormick Stores Corp.	113,116	Montgomery Ward, & Co.	1,045,767
		Spiegel, Inc.	129,947
GROCERY STORES		FURNITURE STORES	
Great Atlantic & Pacific Tea Co.	4,304,991	Barker Bros. Corp.	42,673
Safeway Stores, Inc.	1,989,305	W. & J. Sloane	29,529
Kroger Co.	1,492,552	Reliable Stores Corp.	27,116
American Stores Co.	654,727	Sterchi Bros. Stores, Inc.	18,852
First National Stores, Inc.	491,668	Spear & Co.	18,362
		Weiman Co., Inc.	12,158

Largest U. S. and Foreign Corporations

(millions of dollars)

Source: Fortune Magazine.

Ten Largest Industrial Corporations

	Sales	Assets ¹
General Motors	\$10,796	\$7,400
Standard Oil (N. J.) ..	7,127	7,902
Ford Motor	4,647	3,071
U. S. Steel	4,229	4,109
General Electric	4,090	2,221
Socony Mobil Oil	2,750	2,820
Chrysler	2,676	1,295
Swift	2,429	562
Western Electric	2,373	1,224
Gulf Oil	2,340	2,872

Five Largest Foreign Industrial Corporations

	Sales	Assets ¹
Royal Dutch-Shell (Britain-Holland) ..	\$6,500	\$3,496
Unilever (Britain- Holland)	4,680	1,318
Imperial Tobacco (Britain)	2,380	756 ²
British Petroleum	2,021	1,207
Imperial Chemical In- dustries	1,218	1,540 ³

Five Largest Commercial Banks

	Assets ⁴
Bank of America	\$9,992
Chase Manhattan Bank	7,757
First National City Bank	7,588
Manufacturers Trust	3,137
Chemical Corn Exchange Bank	3,070

Five Largest Life Insurance Companies

	Assets ¹
Metropolitan	\$14,785
Prudential	13,262
Equitable Life Assurance	8,473
New York Life	6,239
John Hancock Mutual	4,897

Five Largest Transportation Companies

	Operating Revenues (1956)	Assets ¹
Pennsylvania Railroad ...	\$992	\$3,034
New York Central Railroad	872	2,625
Southern Pacific Transp. System	678	2,139
Atchison, Topeka & Santa Fe R'y	590	1,534
Union Pacific R. R.	514	1,459

Five Largest Utilities

	Assets ⁴
American Tel & Tel	\$16,207
Pacific Gas & Electric	1,979
Consolidated Edison of N. Y.	1,725
Commonwealth Edison (Chicago)	1,349
American Gas & Electric	1,159

¹ As of Jan. 2, 1957. ² Estimated. ³ 1955 fiscal year. ⁴ As of Dec. 31, 1956.

Number of Service Establishments and Places of Amusement, 1948 and 1954

Source: U. S. Department of Commerce.

Kind of business	1948	1954	Kind of business	1948	1954
PERSONAL SERVICES:			Bicycle repair shops.....	1,283	561
Barber shops.....	91,993	91,122	Blacksmith shops.....	8,249	5,824
Barber and beauty shops.....	2,591	2,018	Electrical repair shops.....	19,440	32,195
Baths and masseurs.....	1,305	2,265	Jewelry, watch, clock repair.....	12,750	11,246
Beauty parlors.....	74,497	76,544	Leather goods repair.....	560	393
Cleaning and dyeing plants.....	25,534	29,200	Locksmiths and gunsmiths.....	1,518	1,801
Costume and dress suit rental.....	510	515	Musical instrument repair.....	789	2,972
Diaper service.....	384	381	Radio repair.....	12,558	22,824†
Funeral service, crematories.....	18,675	18,387	Refrigerator repair.....	2,531	5,037
Fur repair and storage.....	2,334	1,439	Saw, knife and tool sharpening and repair.....	1,304	2,746
Hat cleaning.....	1,426	947	Typewriter repair.....	638	775
Laundries, all types.....	19,182	30,269	Upholstery, furniture.....	10,297	13,305
Linen supply service.....	1,176	1,371	Welding shops.....	3,536	9,244
Photographic studios.....	14,712	17,293	OTHER SERVICES:		
Rug cleaning and repairing.....	1,517	1,777	Hotels.....	29,650	24,778
Shoe repair shops.....	44,151	26,843	Tourist courts and camps.....	25,919	42,184
Shoe shine parlors.....	2,962	1,595	AMUSEMENT PLACES:		
BUSINESS SERVICES:			Amusement parks, devices and shooting galleries.....	2,153	2,488
Advertising agencies.....	3,279	5,063	Bands, orchestras, entertainers.....	2,026	7,097
Auctioneers.....	670	1,639	Bathing beaches (not municipal).....	261	360
Blueprinting and photostat.....	672	1,019	Billiard and pool parlors.....	9,661	7,639
Coin-operated machine.....	1,302	482	Boat and canoe rental.....	1,587	1,811
Consumer credit reporting.....	2,652	5,220	Bowling alleys.....	4,505	5,062
Detective agencies.....	603	1,123	Clubs, baseball.....	357	271
Disinfecting, exterminating.....	1,393	3,270	Clubs, football.....	21	25
Employment agencies.....	2,231	3,153	Dance halls, studios, schools.....	1,074	2,265
Interior decorating.....	601	2,944	Race tracks, automobile.....	112	454
News syndicates.....	77	467	Race tracks, dog.....	15	145
Outdoor advertising.....	798	1,307	Race tracks, horse.....	71	1,246
Photo finishing laboratories.....	1,703	1,719	Riding academies.....	709	689
Sign painting shops.....	4,283	5,703	Skating rinks.....	1,424	1,799
Telephone answering service.....	367	1,171	Sports promoters, commercial operators.....	6,518	7,799
Window cleaning service.....	1,260	4,231	Swimming pools (not municipal).....	499	652
Window display services.....	279	1,101	Theaters, motion pictures.....	17,689	18,491
REPAIR SERVICES:			Theaters and theatrical producers.....	1,426	2,179
Automotive repair services and garages.....	95,544	94,342			
Automobile rentals.....	1,011	2,872*			
Automobile storage, parking.....	8,533	8,572			

* Includes truck rental. † Includes TV repair.

Advertising Expenditures by Medium

Source: Printers' Ink.

Medium	1948		1949		1950		1953		1956	
	Amount (million dollars)	% of total	Amount (million dollars)	% of total	Amount (million dollars)	% of total	Amount (million dollars)	% of total	Amount (million dollars)	% of total
Newspapers.....	1,749.6	36.0	1,905.0	36.6	2,063.2	36.3	2,655.1	34.0	3,305	33.1
Radio.....	617.1	12.7	633.8	12.2	667.1	11.7	707.9	9.1	565	5.7
Magazines.....	512.7	10.5	492.5	9.5	514.9	9.0	663.1	8.5	782	7.8
Direct mail.....	689.1	14.2	755.6	14.5	803.2	14.1	1,075.5	13.8	1,400	14.0
Business papers.....	250.9	5.2	248.1	4.8	251.1	4.4	398.8	5.1	480	4.8
Outdoor.....	132.1	2.7	131.0	2.5	142.5	2.5	174.7	2.2	200	2.0
Farm papers.....	20.4	.4	20.5	.4	21.2	.4	30.8	0.4	35	0.4
Television.....	.....	.....	63.0	1.2	185.0	3.3	688.7	8.8	1,255	12.6
Miscellaneous.....	891.7	18.3	952.7	18.3	1,043.1	18.3	1,408.2	18.1	1,960	19.6
Total.....	4,863.6	100.0	5,202.2	100.0	5,691.3	100.0	7,803.2	100.0	9,982	100.0

Financial Condition of U. S. Life Insurance Companies

(in millions of dollars)

Source: Spectator Yearbook and Institute of Life Insurance.

Year	Assets (admitted) Dec. 31	Total income	Premium income	Payment to policyholders*
1910.....	3,876	781	593	387
1920.....	7,320	1,764	1,381	745
1929.....	17,482	4,337	3,343	1,962
1932.....	20,754	4,653	3,495	3,087
1939.....	29,243	5,453	3,776	2,642
1945.....	44,797	7,674	5,159	2,667
1948.....	55,512	9,751	7,157	3,237
1950.....	64,020	11,337	8,189	3,731
1952.....	73,375	13,076	9,883	4,147
1954.....	84,436	15,280	11,563	4,947
1955.....	90,432	16,544	12,546	5,383
1956.....	96,011	17,865	13,584	5,878

* Beginning 1943, data include payments to U. S. residents by domestic and foreign companies.

Life Insurance in Force in U. S.

(in millions of dollars)

Source: Spectator Yearbook and Institute of Life Insurance.

	Dec. 31	Ordinary	Group	Industrial	Total*
1910.....	11,783	.....	.....	3,125	14,908
1915.....	16,650	100	.....	4,279	21,029
1925.....	52,892	4,247	.....	12,318	69,475
1929.....	75,686	8,994	.....	17,349	102,086
1930.....	78,576	9,801	.....	17,963	106,413
1933.....	70,872	8,681	.....	16,630	96,246
1935.....	70,684	10,208	.....	17,471	98,464
1940.....	79,346	14,938	.....	20,866	115,530
1945.....	101,550	22,172	.....	27,675	151,762
1948.....	131,158	37,068	.....	31,253	201,208
1950.....	149,071	47,793	.....	33,415	234,168
1951.....	159,054	54,398	.....	34,870	253,140
1952.....	170,795	62,913	.....	36,448	276,591
1954.....	198,419	86,395	.....	38,564	333,719
1955.....	216,600	101,300	.....	39,682	372,332
1956.....	240,521	132,000	.....	40,109	412,630

* Includes credit insurance.

Domestic Passenger Traffic by Major Carriers

(in millions of passenger-miles)

Source: Interstate Commerce Commission; Corps of Engineers, U. S. A.; Civil Aeronautics Board; Assn. of American Railroads.

Year	Steam railroads		Busses		Air carriers		Electric Interurban railways		Inland waterways ¹	
	Passenger- miles	% of total	Passenger- miles	% of total	Passenger- miles	% of total	Passenger- miles	% of total	Passenger- miles	% of total
1939.....	22,713	65.0	9,100	26.0	683	2.0	956	2.7	1,486	4.3
1941.....	29,406	62.7	13,100	27.9	1,385	3.0	1,177	2.5	1,821	3.9
1944.....	95,663	74.2	26,920	20.8	2,178	1.7	2,042	1.6	2,187	1.7
1947.....	45,972	58.5	23,948	30.4	6,110	7.8	771	1.0	1,845	2.3
1949.....	35,133	52.8	22,411	33.7	6,753	10.1	842	1.3	1,402	2.1
1952.....	34,040	49.3	20,500	29.7	12,528	18.1	650	0.9	1,400	2.0
1953.....	31,679	46.4	19,730	28.9	14,760	21.6	582	0.9	1,487	2.2
1954 ²	29,310	38.4	25,614	33.6	19,568	25.6	157	0.2	1,701	2.2
1955 ²	28,548	36.5	25,117	32.1	22,741	29.0	147	0.2	1,738	2.2
1956 ²	28,200	34.9	24,900	30.9	25,700	31.9	150	0.2	1,700	2.1

¹ Rivers, canals and Great Lakes. ² Preliminary. ³ Estimated.

Domestic Freight Traffic by Major Carriers

(in millions of ton-miles)

Source: Interstate Commerce Commission; Corps of Engineers, U. S. A.; Civil Aeronautics Board; Assn. of American Railroads.

Year	Steam railways ¹		Inland waterways ²		Motor trucks		Oil pipelines		Air carriers ¹	
	Ton- miles	% of total	Ton- miles	% of total	Ton- miles	% of total	Ton- miles	% of total	Ton- miles	% of total
1939.....	338,125	64.22	88,897	16.88	43,931	8.34	55,602	10.56	12	(³)
1941.....	480,730	64.68	130,916	17.61	63,258	8.51	68,428	9.20	19	(³)
1944.....	745,573	70.14	137,005	12.89	47,395	4.46	132,864	12.50	71	(³)
1947.....	663,442	67.51	135,964	13.84	77,918	7.93	105,161	10.70	158	(³)
1949.....	533,862	61.17	130,192	14.91	93,653	10.73	114,916	13.16	235	(³)
1951.....	654,340	59.05	168,143	15.17	133,160	12.02	152,115	13.73	378	(³)
1952.....	622,300	57.76	154,900	14.37	140,000	12.99	160,000	14.84	420	(³)
1953.....	613,171	52.55	160,622	15.49	206,808	17.72	165,728	14.30	427	(³)
1955.....	631,385	49.4	216,508	17.0	226,188	17.7	203,244	15.9	481	(³)
1956 ³	656,000	49.2	223,000	16.8	230,000	17.3	223,000	16.7	515	(³)

¹ Includes express and mail. ² Rivers, canals and domestic traffic on Great Lakes. ³ Estimated. ⁴ Negligible.

Farm Income—Estimated Receipts from Major Farm Marketings (in millions of dollars)

Source: U. S. Department of Agriculture.

Year	Cotton and cotton-seed	Tobacco	Food grains	Oil-bearing crops	Feed grains and hay	Vegetables	Fruits and nuts	Meat animals	Dairy products	Poultry & eggs
1919.....	2,282	500	1,749	96	1,173	631	597	4,045	1,522	1,106
1929.....	1,511	279	788	85	697	751	582	3,017	1,838	1,187
1932.....	461	115	220	29	247	359	299	1,159	986	562
1939.....	627	271	464	110	485	545	411	2,271	1,346	775
1944.....	1,548	688	1,369	581	1,203	1,510	1,446	5,706	2,938	2,473
1947.....	2,245	1,033	2,768	908	2,328	1,710	1,160	9,340	4,046	2,926
1949.....	2,632	904	2,339	846	2,299	1,641	1,013	8,383	3,778	3,088
1951.....	2,849	1,187	1,896	1,058	1,966	1,670	1,214	11,308	4,290	3,667
1953.....	3,186	1,092	2,460	995	2,228	1,757	1,228	8,852	4,370	3,185
1955.....	2,703	1,161	2,312	912	2,323	1,624	1,272	8,868	4,114	3,013
1956.....	2,476	1,151	2,027	1,236	2,272	1,963	1,437	8,245	4,491	3,220

Farm Income (in millions of dollars)

Source: U. S. Department of Agriculture.

Year	Est. cash income		Government payments	Total cash income
	Crops	Livestock and livestock products		
1919.....	7,645	6,925	...	14,570
1929.....	5,120	6,179	...	11,299
1931.....	2,532	3,837	...	6,369
1935.....	2,957	4,117	573	7,647
1941.....	4,605	6,470	544	11,619
1945.....	9,419	12,001	742	22,162
1946.....	10,835	13,719	772	25,326
1947.....	13,231	16,523	314	30,068
1949.....	12,586	15,426	185	28,197
1950.....	12,575	16,198	283	29,056
1951.....	13,053	19,569	286	32,908
1952.....	14,627	18,498	292	33,417
1953.....	13,797	17,178	213	31,188
1955.....	13,427	15,837	229	29,493
1956.....	13,792	16,207	554	30,553

Farms—Population and Property

Source: U. S. Bureau of the Census.

Item	1930	1940	1950
Farm population (thousands) ..	29,447	29,047	24,335
Number of farms (thousands) ..	6,289	6,097	5,382
Tenancy as % of total.....	42.2	38.7	26.8
All land in farms (million acres) ..	986	1,061	1,159
Average acreage per farm.....	156.9	174.0	215.3
Value of farm property (millions of dollars)*.....	56,973	41,227	101,738

* Includes land, buildings, livestock, implements and machinery.

U. S. Farm Index (1910-14 = 100)

Source: U. S. Department of Agriculture.

Year	Prices paid by farmers*	Prices rec'd by farmers†	Parity ratio
1935-39 average ..	125	107	85
1945.....	189	206	109
1948.....	259	285	110
1950.....	255	256	100
1951.....	281	302	107
1952.....	286	288	101
1955.....	281	236	84
1957†.....	295	240	82

* Commodities, interest and taxes and wage rates.
† All crops and livestock. ‡ Average first 6 months.

Farm to Retail Price Spreads for Farm Food Products*

Source: U. S. Department of Agriculture.

Year	Retail cost (dollars)	Net farm value (dollars)	Farmer's share of consumer's dollars (%)
Average:			
1913-19.....	361	170	47
1920-24.....	444	181	41
1925-29.....	439	183	42
1933.....	277	90	32
1937.....	363	151	42
1939.....	318	122	38
1945.....	459	246	54
1949.....	939	435	46
1950.....	924	432	47
1953.....	1,002	452	45
1954.....	993	425	43
1955.....	975	396	41
1956.....	976	390	40
1957†.....	987	387	39

* Retail cost of 1935-39 average annual purchases of farm food products by a family of three average consumers; farm value of equivalent quantities sold by producers adjusted for value of by-products. † March.

Agricultural Output by States, 1956 Crops

Source: U. S. Department of Agriculture.

State	Wheat (1,000 bu.)	Corn (1,000 bu.)	Cotton lint ¹	Potatoes (1,000 cwt.)	Tobacco (1,000 lbs.)	Cattle ² (1,000 head)	Hogs ² (1,000 head)
Alabama.....	1,840	56,675	750	2,150	708	1,771	1,000
Arizona.....	1,740	1,485	329	1,075	....	1,012	27
Arkansas.....	2,736	18,090	1,426	513	....	1,603	561
California.....	8,253	14,472	1,446	26,037	....	3,870	438
Colorado.....	18,842	17,952	....	9,975	....	2,033	177
Connecticut.....	....	1,911	....	1,280	15,400	171	25
Delaware.....	961	9,750	....	1,665	....	67	37
Florida.....	....	12,180	13	6,766	27,275	1,842	465
Georgia.....	2,436	65,064	579	229	129,491	1,546	1,730
Idaho.....	38,980	3,894	....	34,910	....	1,388	103
Illinois.....	59,496	598,673	3	245	....	4,270	6,348
Indiana.....	35,580	296,546	....	1,580	12,775	2,262	4,520
Iowa.....	2,245	521,679	....	432	....	6,284	10,790
Kansas.....	143,282	32,067	....	117	95	3,364	808
Kentucky.....	5,486	84,456	10	900	369,444	1,863	1,239
Louisiana.....	700	16,589	581	407	155	1,961	501
Maine.....	....	341	....	40,600	....	220	21
Maryland.....	4,730	28,620	....	511	38,500	524	207
Massachusetts.....	....	1,316	....	1,168	6,791	178	150
Michigan.....	31,290	102,204	....	8,031	....	1,886	729
Minnesota.....	17,218	329,705	....	11,200	148	4,018	3,201
Mississippi.....	504	39,150	1,609	370	....	2,538	840
Missouri.....	49,800	189,408	448	700	3,600	4,027	3,666
Montana.....	86,983	2,992	....	1,320	....	2,342	114
Nebraska.....	63,044	116,864	....	2,690	....	4,570	1,841
Nevada.....	414	200	....	432	....	609	16
New Hampshire.....	....	360	....	414	....	115	12
New Jersey.....	1,508	12,032	....	3,570	....	224	207
New Mexico.....	1,107	1,160	301	225	....	1,136	40
New York.....	9,610	34,104	....	18,520	....	2,242	146
North Carolina.....	9,231	80,688	359	3,328	970,200	965	1,314
North Dakota.....	117,758	31,537	....	12,420	....	2,031	345
Ohio.....	39,676	215,700	....	2,982	21,780	2,416	2,666
Oklahoma.....	67,168	5,296	261	226	....	3,018	407
Oregon.....	25,607	2,400	....	8,440	....	1,398	141
Pennsylvania.....	15,579	71,736	....	8,437	51,000	1,915	603
Rhode Island.....	....	252	....	913	....	24	11
South Carolina.....	4,028	20,475	513	656	170,850	639	593
South Dakota.....	16,537	105,952	....	950	....	3,167	1,195
Tennessee.....	4,612	55,770	552	728	132,888	1,771	1,207
Texas.....	26,388	27,463	3,615	1,378	....	7,736	946
Utah.....	7,275	2,112	....	1,632	....	734	60
Vermont.....	....	2,655	....	448	....	469	12
Virginia.....	7,236	39,456	12	3,784	173,083	1,382	705
Washington.....	59,826	2,812	....	9,895	....	1,146	116
West Virginia.....	960	8,500	....	780	4,125	581	138
Wisconsin.....	1,440	167,140	....	7,216	16,990	4,341	1,753
Wyoming.....	5,101	1,408	....	993	....	1,115	36
Total.....	997,207	3,451,292	13,310	243,238	2,145,298	95,166	52,207

¹ Thousands of 500 lb. bales. ² Number on farms as of Jan. 1, 1957.

Domestic Animals on Farms, Number and Value

Source: U. S. Department of Agriculture.

January 1:	Number (thousands)							Value of domestic animals (millions of dollars)
	Horses & Mules	Cattle	Dairy cows	Sheep	Swine	Chickens	Turkeys	
1945.....	11,950	85,573	27,770	46,520	59,373	516,497	7,082	11,707
1947.....	10,129	80,554	25,842	37,489	56,810	467,217	5,879	15,546
1951.....	7,036	82,083	23,722	30,635	62,852	442,657	5,091	22,165
1952.....	6,150	88,072	23,369	32,088	63,582	449,925	5,822	25,201
1953.....	5,403	94,241	24,094	31,861	54,294	429,731	5,305	19,477
1956.....	3,962	97,465	23,318	27,009	55,088	382,218	4,892	13,933

Regional Economic Differences

Source: U. S. Depts. of Commerce and Labor and *Sales Management*, American Telephone and Telegraph Co. and Edison Electric Institute.

State	1950 % of employed in Agri- culture	1950 Manufac- turing	Income received per capita, 1956	% increase per capita income received 1929-56	Est. retail sales* (\$ millions, 1956)	% distribution of electric customers, 1956	% households with telephone service, Jan. 1957
New England.....	....	....	....	...	12,339	6.65	...
Maine.....	9.3	34.2	1,667	177	1,028	0.58	70
New Hampshire.....	6.5	40.4	1,812	163	660	0.30	75
Vermont.....	18.2	24.6	1,641	162	429	0.15	73
Massachusetts.....	1.8	37.4	2,206	142	6,112	3.62	91
Rhode Island.....	1.5	44.0	2,012	131	928	0.19	78
Connecticut.....	2.9	42.6	2,673	160	3,181	1.65	98
Middle Atlantic.....	....	....	....	...	38,673	23.76	...
New York.....	2.9	29.8	2,395	107	19,814	12.39	87
New Jersey.....	2.5	37.7	2,443	162	6,772	4.19	91
Pennsylvania.....	4.1	35.5	2,008	159	12,087	7.18	85
East North Central.....	....	....	....	...	42,464	20.36	...
Ohio.....	6.9	36.6	2,154	176	11,673	6.10	83
Indiana.....	11.6	34.8	1,946	218	4,984	2.08	78
Illinois.....	7.1	32.0	2,383	149	12,262	5.25	82
Michigan.....	6.7	40.9	2,156	172	9,158	4.92	84
Wisconsin.....	18.6	30.6	1,864	173	4,386	2.00	80
West North Central.....	....	....	....	...	17,184	7.30	...
Minnesota.....	22.1	16.3	1,745	192	3,754	1.83	83
Iowa.....	28.5	15.2	1,651	186	3,234	1.49	87
Missouri.....	17.5	21.8	1,858	196	4,874	2.40	73
North Dakota.....	44.2	2.9	1,365	264	704	0.67	67
South Dakota.....	40.5	4.9	1,330	219	671	1.29	66
Nebraska.....	29.6	9.2	1,588	169	1,659	0.65	79
Kansas.....	23.0	12.6	1,668	212	2,287	0.86	79
South Atlantic.....	....	....	....	...	24,626	12.38	...
Delaware.....	8.8	32.4	2,858	181	544	0.18	84
Maryland.....	6.1	24.9	2,102	171	3,116	1.49	77
District of Columbia.....	0.2	7.3	2,371	86	1,348	0.77	87
Virginia.....	14.6	20.5	1,647	279	3,458	2.63	65
West Virginia.....	9.8	18.9	1,420	207	1,652	0.58	57
North Carolina.....	24.6	27.9	1,305	291	4,019	2.33	50
South Carolina.....	26.1	27.9	1,133	320	1,739	0.38	44
Georgia.....	21.2	23.0	1,400	300	3,471	1.58	56
Florida.....	12.2	10.7	1,762	238	5,280	2.43	66
East South Central.....	....	....	....	...	9,293	4.00	...
Kentucky.....	25.7	15.8	1,324	239	2,394	1.08	53
Tennessee.....	21.8	21.1	1,317	249	3,026	1.06	63
Alabama.....	24.3	21.8	1,229	279	2,392	1.33	50
Mississippi.....	42.1	12.6	964	238	1,481	0.59	39
West South Central.....	....	....	....	...	16,575	8.76	...
Arkansas.....	35.0	13.8	1,088	257	1,428	0.72	42
Louisiana.....	17.3	15.1	1,444	248	2,762	1.49	65
Oklahoma.....	20.5	9.8	1,561	244	2,342	1.25	70
Texas.....	16.0	13.5	1,686	253	10,042	5.29	65
Mountain.....	....	....	....	...	7,363	3.25	...
Montana.....	24.8	8.5	1,862	213	821	0.35	71
Idaho.....	26.8	9.2	1,587	216	738	0.30	69
Wyoming.....	20.5	6.0	1,875	177	399	0.65	69
Colorado.....	15.1	12.2	1,863	192	1,983	0.90	77
New Mexico.....	18.4	5.9	1,494	267	923	0.33	53
Arizona.....	14.7	8.8	1,718	191	1,217	0.60	55
Utah.....	12.4	12.2	1,633	192	869	0.54	79
Nevada.....	10.5	5.1	2,413	175	412	0.15	55
Pacific.....	....	....	....	...	23,986	13.56	...
Washington.....	9.3	21.2	2,022	170	3,142	1.90	80
Oregon.....	12.1	22.7	1,908	179	2,120	1.36	74
California.....	7.3	19.6	2,419	143	18,723	10.29	85
Total.....	12.2	25.9	1,940	176	192,504	100.00	76

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Receipts and Expenditures of the National Government (in millions of dollars)

Source: U. S. Treasury Department.

Yearly average or year ended June 30	Receipts				Expenditures					Total 'expendi- tures	Surplus (+) or deficit (-)		
	Customs (including tonnage tax) ¹	Internal revenue		Other receipts	Total receipts	Net receipts ²	Department of the Army ³	Department of the Navy	Interest on public debt			All other	
		Income and profits tax	Other										
1789-1800.....	6	.....	.....	.....	7	7	2	.....	3	1	6	.....	.....
1801-1810.....	12	.....	.....	.....	13	13	2	.....	4	2	9	+4	.....
1811-1820.....	16	.....	2	3	21	21	11	.....	5	4	24	-3	.....
1821-1830.....	20	.....	.....	.....	22	22	4	.....	4	3	16	+6	.....
1831-1840.....	20	.....	10	2	30	30	8	.....	.....	11	24	+6	.....
1841-1850.....	24	.....	3	.....	27	27	13	.....	.....	11	32	+6	.....
1851-1860.....	54	.....	6	.....	60	60	16	.....	.....	3	60	-5	.....
1861-1865.....	69	.....	55	20	161	161	548	.....	35	29	60	.....	.....
1866-1870.....	179	17	171	46	447	447	128	.....	135	36	684	-523	.....
1871-1875.....	186	8	113	30	337	337	40	.....	28	70	377	+70	.....
1876-1880.....	146	.....	117	25	288	288	37	.....	112	112	287	+50	.....
1881-1885.....	202	.....	132	33	367	367	43	.....	100	102	255	+33	.....
1886-1890.....	216	.....	127	32	375	375	40	.....	64	135	258	+109	.....
1891-1895.....	177	.....	150	26	353	353	50	.....	44	177	279	+96	.....
1896-1900.....	185	.....	207	43	435	435	111	.....	38	255	364	-11	.....
1901-1905.....	260	.....	255	44	559	559	133	.....	28	260	457	-22	.....
1906-1910.....	311	4	257	56	628	628	169	.....	86	288	535	+24	.....
1915.....	210	4915.....	336	72	698	698	202	.....	23	334	761	-63	.....
1918.....	180	2,314	807	299	3,665	3,665	4,870	1,279	190	6,358	12,697	-9,032	.....
1919.....	602	2,331	607	493	4,033	4,033	426	365	678	1830	3,299	+734	.....
1923.....	251	746	858	225	2,080	2,021	435	349	689	3,150	4,623	-2,802	.....
1933.....	486	2,163	2,434	211	5,294	4,979	628	557	866	5,705	7,756	-2,777	.....
1937.....	319	2,189	2,972	138	5,668	5,104	695	673	941	6,657	8,966	-3,862	.....
1939.....	324	16,094	6,050	934	23,402	22,202	42,526	20,888	1,808	14,400	79,622	-57,420	.....
1943.....	355	35,173	8,729	3,493	47,750	44,762	50,490	30,047	3,617	14,549	98,703	-53,941	.....
1945.....	435	30,885	9,426	3,492	44,238	40,027	27,987	15,161	4,722	12,833	60,703	-20,676	.....
1946.....	494	29,305	10,074	4,635	44,508	40,043	9,172	5,597	4,958	19,562	39,289	+754	.....
1947.....	384	29,482	10,825	2,082	42,773	38,246	7,862	4,435	5,339	20,730	40,057	-1,811	.....
1949.....	423	28,263	11,186	1,439	41,311	37,045	5,789	4,130	5,750	20,977	40,167	-3,122	.....
1950.....	624	37,753	13,354	1,639	53,369	48,143	8,636	5,863	5,613	18,163	44,633	+3,510	.....
1951.....	551	51,347	14,288	1,814	67,999	62,129	17,453	10,231	5,859	19,750	66,145	-4,017	.....
1952.....	613	54,073	15,808	1,864	72,649	64,825	17,054	11,875	6,503	23,756	74,274	-9,449	.....
1953.....	562	53,906	16,394	2,311	73,173	64,655	13,515	11,293	6,382	20,913	67,772	-3,117	.....
1954.....	606	49,915	16,374	2,559	69,454	60,390	9,448	9,733	6,370	22,613	64,570	-4,180	.....
1955.....	705	56,632	18,476	3,006	78,820	68,165	9,274	9,744	6,787	23,986	66,540	+1,626	.....

¹ Beginning 1932, tonnage tax incl. in "Other receipts." ² Net receipts equal total receipts less (a) appropriations to federal old-age and survivors' insurance trust fund beginning fiscal year 1937 and (b) refunds of receipts beginning fiscal year 1931. ³ Formerly War Department. ⁴ Formerly War Department. ⁵ Formerly War Department. ⁶ Formerly War Department.

Money and Interest Rates

(Per cent per annum)

Source: Federal Reserve Board.

Year	Open market rate in New York City			Commercial loan rates		
	Prime commercial paper, 4 to 6 months*	Prime bankers' acceptances, 90 days*	Call loans, renewal rate†	New York City	7 other northern & eastern cities	11 southern & western cities
1929.....	5.85	5.03	7.61	5.76	5.82	5.93
1932.....	2.73	1.28	2.05	4.20	4.81	5.21
1933.....	1.73	.63	1.16	3.43	4.46	5.04
1935.....	.76	.13	.56	1.76	3.39	3.76
1938.....	.81	.44	1.00	1.69	2.75	3.26
1941.....	.54	.44	1.00	1.97	2.55	3.19
1945.....	.75	.44	1.00	1.99	2.51	2.73
1947.....	1.03	.87	1.38	1.81	2.33	2.76
1949.....	1.48	1.12	1.63	2.37	2.71	3.10
1951.....	2.17	1.60	2.17	2.83	3.09	3.52
1953.....	2.52	1.88	3.06	3.47	3.68	4.04
1956.....	3.31	2.64	4.20	4.00	4.25	4.38
1957†.....	3.63	3.30	4.38	4.23	4.40	4.60

* Prevailing rate. † New York Stock Exchange; average of daily quotations. ‡ First five months.

U. S. Money in Circulation by Denomination¹

(in millions of dollars)

Source: U. S. Treasury Department.

Denomination	1939	1940	1943	1945	1950	1951	1952	1953	1956	1957 ²
Coin.....	590	648	1,019	1,274	1,554	1,654	1,750	1,812	2,027	2,020
\$1 ²	559	610	909	1,039	1,113	1,182	1,228	1,249	1,369	1,276
\$2.....	36	39	70	73	64	67	71	72	78	75
\$5.....	1,019	1,129	1,973	2,313	2,049	2,120	2,143	2,119	2,196	2,055
\$10.....	1,772	2,021	5,194	6,782	5,998	6,329	6,561	6,565	6,734	6,425
\$20.....	1,576	1,800	5,705	9,201	8,529	9,177	9,696	9,819	10,194	9,737
\$50.....	460	538	1,481	2,327	2,422	2,544	2,669	2,732	2,771	2,674
\$100.....	919	1,112	2,912	4,220	5,043	5,207	5,447	5,581	5,704	5,566
\$500.....	191	227	407	454	368	355	343	333	292	285
\$1,000.....	425	523	749	801	588	556	512	486	407	395
\$5,000.....	20	30	9	7	4	4	4	4	3	3
\$10,000.....	32	60	22	24	12	12	10	11	14	8
Total ⁴	7,598	8,732	20,449	28,515	27,741	29,206	30,433	30,781	31,790	30,519

¹ End of year. ² Paper currency only; \$1 silver coins reported under coin. ³ End of April. ⁴ Includes unassorted currency.

Public Debt of the United States

Source: U. S. Treasury Department.

June 30—	Gross debt		June 30—	Gross debt	
	Amount (in millions of dollars)	Per capita (dollars)		Amount (in millions of dollars)	Per capita (dollars)
1800 [*]	\$ 83	\$ 15.87	1945.....	\$ 258,682	\$ 1,848.60
1850.....	65	2.06	1946.....	269,422	1,905.42
1865.....	2,678	75.01	1947.....	258,286	1,792.05
1900.....	1,263	16.60	1948.....	252,292	1,720.71
1913.....	1,191	11.85	1950.....	257,357	1,696.75
1920.....	24,299	228.23	1951.....	255,222	1,653.42
1929.....	16,931	139.04	1952.....	259,105	1,650.12
1932.....	19,487	156.10	1953.....	266,071	1,666.81
1935.....	28,701	225.55	1954.....	271,260	1,670.23
1937.....	36,425	282.75	1955.....	274,374	1,660.38
1939.....	40,440	308.98	1956.....	276,200	1,624.71
1943.....	136,696	999.83	1957 estimated.....	272,000	1,600.00

* Figures for 1800 are as of Jan. 1.

U. S. Exports of Leading Commodities

(Value in millions of dollars)

Source: U. S. Department of Commerce.

Commodity	Value	
	1955	1956
Crude materials:	1,907	2,511
Coal.....	485	732
Cotton, unmanufactured.....	477	729
Tobacco, unmanufactured.....	356	334
Soybeans.....	175	178
Crude petroleum.....	38	90
Foodstuffs:	1,943	2,588
Grains and preparations.....	940	1,339
Wheat, including flour.....	480	796
Corn.....	169	182
Fruits and vegetables.....	286	371
Meats and edible fats.....	151	180
Dairy products and eggs.....	134	163
Manufactures, including semimanufactures:	11,569	13,739
Excluding type I and II special category items.....	9,656	11,336
Machinery.....	2,824	3,458
Electrical machinery and apparatus.....	644	747
Industrial machinery, total.....	1,630	2,137
Construction and mining machinery.....	537	787
Engines, turbines and parts.....	162	208
Metalworking and machine tools.....	208	237
Agricultural machinery and implements.....	123	126
Tractors, parts and accessories.....	286	291
Automobiles, parts and accessories.....	1,238	1,356
Motor trucks and busses, commercial, new.....	345	440
Passenger automobiles, commercial, new.....	382	332
Chemicals and related products.....	1,047	1,198
Medicinal and pharmaceutical preparations.....	227	246
Chemical specialties.....	385	451
Industrial chemicals.....	161	194
Iron and steel-mill products, including scrap.....	818	1,068
Textile manufactures.....	616	630
Cotton cloth, duck and tire fabric ¹	147	142
Broad woven fabrics of synthetic fibers ²	93	91
Metal manufactures.....	397	468
Nonferrous metals and ferroalloys.....	293	378
Rubber manufactures.....	160	211
Paper and manufactures.....	195	198
Including type II, but excluding type I special category items.....	11,173	13,190
Machinery.....	3,083	3,824
Electrical machinery and apparatus.....	843	1,015
Tractors, parts and accessories.....	345	390
Automobiles, parts and accessories.....	1,399	1,513
Chemicals and related products.....	1,061	1,211
Industrial chemicals.....	161	196
Aircraft.....	729	1,059
Petroleum products.....	608	671
Motor fuel and gasoline and jet fuel.....	163	177
Lubricating oils.....	187	192
Rubber manufactures.....	203	268
Small arms and ammunition.....	245	187

U. S. Imports of Leading Commodities

(Value in millions of dollars)

Source: U. S. Department of Commerce.

Commodity	Value	
	1955	1956
Crude materials:	2,845	3,075
Crude petroleum.....	655	829
Nonferrous ores and concentrates ¹	443	469
Manganese ore.....	72	71
Tungsten ore.....	56	58
Copper ore and concentrates.....	73	60
Zinc-bearing ores.....	40	53
Lead ore and flue dust.....	38	52
Crude rubber.....	442	398
Iron ore.....	177	250
Wool, unmanufactured.....	260	242
Diamonds, rough, uncut, industrial.....	143	159
Tobacco, unmanufactured.....	85	90
Undressed furs.....	81	79
Hides and skins.....	57	66
Vegetable fibers, except cotton, unmanufactured.....	54	55
Oilseeds (mainly copra).....	55	48
Foodstuffs:	3,116	3,202
Coffee.....	1,357	1,438
Cane sugar.....	415	437
Fruits, edible nuts and vegetables.....	246	250
Fish, including shellfish.....	214	238
Alcoholic spirits and wines.....	162	185
Cocoa or cacao beans.....	185	145
Meat products.....	163	145
Grains and preparations.....	62	81
Other.....	312	283
Semimanufactures:	2,776	3,002
Nonferrous metals ²	1,008	1,126
Copper.....	350	391
Tin.....	142	146
Aluminum.....	105	127
Nickel metal and oxide.....	180	184
Lead.....	83	89
Zinc.....	47	65
Gas oil and fuel oil.....	321	384
Sawmill products.....	323	306
Woodpulp.....	277	297
Diamonds, cut but not set.....	75	76
Iron and steel semimanufactures.....	57	74
Industrial chemicals.....	59	70
Fertilizer materials.....	75	69
Vegetable oils, expressed, inedible.....	53	60
Plywood.....	50	55
Finished manufactures:	2,599	3,211
Paper and manufactures.....	666	750
Newsprint.....	613	688
Textile manufactures.....	470	554
Burlaps.....	79	81
Cotton manufactures.....	124	154
Wool manufactures.....	119	145
Fabrics of wool and mohair.....	54	62
Machinery, total.....	277	351
Agricultural implements and tractors.....	82	75
Vehicles and parts.....	161	276
Automobiles, new ³	70	129
Aircraft.....	32	87
Steel-mill manufactures.....	94	165
Clocks, watches and parts.....	66	75
Iron and steel advanced manufactures.....	47	66

¹ Excludes pile, upholstery and drapery fabrics and remnants and mill ends. ² Excludes tire fabrics.

¹ Includes ores of ferroalloying metals. ² Includes ferroalloys. ³ Trucks and busses excluded.

U. S. Exports and General Imports by Countries and Areas

(Value in millions of dollars)

Source: U. S. Department of Commerce.

Area and country	Exports, including re-exports ¹			General imports		
	1949	1955	1956	1949	1955	1956
Total.....	11,936.0	15,546.7	18,987.2	6,592.0	11,384.4	12,589.7
Canada.....	1,925.5	3,404.1	4,140.6	1,550.8	2,653.4	2,892.6
20 American Republics.....	2,632.9	3,314.9	3,851.7	2,301.0	3,328.0	3,629.2
Western Europe.....	3,973.0	5,113.8	6,396.1	909.0	2,391.4	2,887.4
Dependencies of Western Europe.....	403.8	509.9	659.5	705.1	992.6	1,027.2
Other areas.....	3,000.8	3,204.0	3,939.4	1,126.1	2,019.0	2,153.3
NORTH AND SOUTH AMERICA						
Canada.....	1,925.5	3,210.2	3,972.2	1,550.8	2,653.4	2,892.6
20 American Republics.....	2,632.9	3,157.7	3,680.3	2,301.0	3,328.0	3,629.2
Mexico.....	454.4	705.0	840.5	243.5	396.8	400.5
Central American Republics.....	257.1	295.1	309.0	139.0	230.0	215.9
Costa Rica.....	26.2	43.2	41.7	22.4	28.1	19.1
El Salvador.....	24.8	46.8	49.4	40.2	61.9	48.3
Guatemala.....	43.7	56.5	79.5	43.3	71.2	78.9
Honduras.....	32.7	33.9	38.1	15.2	22.7	29.9
Nicaragua.....	14.8	38.7	32.5	6.7	25.6	19.5
Panamá, Republic of.....	114.9	75.9	67.8	11.2	20.4	20.1
Cuba.....	374.9	451.1	511.5	387.5	421.7	456.8
Dominican Republic.....	36.9	60.1	67.2	24.4	62.2	60.1
Haiti.....	23.3	31.6	36.3	19.8	16.4	14.9
Argentina.....	123.5	148.0	212.2	97.5	126.0	132.6
Bolivia.....	34.6	39.0	47.0	48.5	40.5	41.8
Brazil.....	365.0	240.5	292.8	551.8	632.5	745.4
Chile.....	138.5	91.0	154.4	152.5	200.9	235.8
Colombia.....	167.9	331.5	315.1	241.5	442.1	409.3
Ecuador.....	31.0	45.9	43.6	17.1	53.0	53.2
Paraguay.....	7.5	4.8	7.6	5.7	4.3	5.8
Peru.....	81.9	120.4	159.0	40.2	110.5	134.3
Uruguay.....	33.4	37.7	33.1	54.0	14.7	25.3
Venezuela.....	503.0	556.0	651.2	278.1	576.3	697.6
Netherlands Antilles.....	75.2	56.7	80.0	111.4	216.5	236.5
EUROPE						
Western Europe.....	3,973.0	4,154.2	5,121.6	909.0	2,391.4	2,887.4
Austria.....	149.7	56.0	76.2	9.6	34.3	46.8
Belgium and Luxemburg.....	300.9	318.9	432.8	94.2	242.2	303.2
Denmark.....	91.1	68.5	83.5	6.6	58.0	58.3
France.....	465.6	358.5	558.2	61.5	202.2	235.9
Germany, Western.....	817.3	595.3	780.8	45.5	366.2	494.2
Greece.....	152.2	75.8	90.9	15.7	25.8	27.2
Iceland.....	7.4	15.4	11.6	2.2	6.8	8.6
Ireland (Eire).....	60.7	37.5	28.9	1.7	5.5	8.0
Italy.....	451.3	355.8	523.4	70.9	180.1	215.8
Trieste.....	11.8	10.4	9.2	(X)	0.2	0.1
Netherlands.....	268.1	479.2	565.5	59.3	147.3	165.3
Norway.....	87.9	75.4	93.6	30.7	61.3	72.1
Portugal.....	50.6	33.6	43.9	13.6	27.4	24.6
Sweden.....	81.0	161.9	182.0	54.4	84.9	109.0
Switzerland.....	137.7	163.7	219.0	93.1	147.1	178.9
Turkey.....	82.9	96.1	109.0	55.7	57.2	67.3
United Kingdom.....	662.0	926.4	903.6	227.6	616.0	725.4
Other Western Europe, total.....	94.8	325.6	409.4	66.6	128.9	146.8
Finland.....	26.0	40.6	47.1	27.4	44.1	48.2
Spain.....	49.2	154.2	253.6	24.3	58.5	67.9
Yugoslavia.....	19.6	130.9	108.6	14.9	26.3	30.7
Soviet bloc.....	61.8	7.0	11.2	67.4	55.8	65.4
ASIA AND OCEANIA						
Western Asia.....	335.5	337.9	383.5	94.7	268.2	304.7
Iran.....	77.1	53.5	76.5	16.4	34.4	41.5
Iraq.....	12.2	33.9	36.4	5.7	31.6	40.4

Area and country	Exports, including re-exports ¹			General imports		
	1949	1955	1956	1949	1955	1956
Israel ²	76.8	89.0	96.1	6.0	17.1	19.0
Kuwait.....	22.3	15.6	30.8	38.8	95.3	93.6
Lebanon.....	39.7	39.6	35.6	2.1	3.6	4.7
Saudi Arabia.....	81.6	69.0	74.4	19.9	57.6	74.0
Far East.....	1,823.7	2,001.2	2,533.5	1,214.5	1,781.2	1,891.3
Southern, southeastern, and eastern Asia.....	1,650.1	1,740.0	2,297.8	1,089.1	1,607.4	1,688.4
British Malaya.....	36.2	35.6	46.4	195.5	235.1	226.5
Ceylon.....	17.1	7.2	9.1	34.8	35.8	30.9
Hong Kong.....	113.6	49.6	67.9	4.3	15.3	19.9
India.....	240.4	188.1	267.5	238.8	221.4	205.5
Indonesia, Republic of.....	119.4	74.7	140.1	120.4	211.9	190.9
Japan.....	466.1	647.8	889.9	82.0	431.9	557.7
Korea, Republic of ³	49.9	127.0	157.4	1.4	6.1	9.7
Pakistan.....	41.0	54.6	137.7	27.7	30.4	36.9
Philippines, Republic of.....	424.9	340.1	318.8	204.7	253.1	256.6
Thailand (Siam).....	28.9	49.9	51.4	48.0	104.7	96.6
Taiwan.....	22.7	107.0	104.3	1.7	6.4	7.9
Vietnam, Laos, and Cambodia.....	16.2	32.8	74.1	1.1	28.9	20.9
Australia.....	124.4	201.6	178.6	97.6	126.4	136.5
New Zealand.....	40.1	51.6	46.0	24.4	43.6	63.6
AFRICA						
Africa, total.....	590.8	589.8	653.7	337.5	619.4	595.8
Algeria.....	22.1	13.6	19.2	4.1	5.8	2.7
Angola.....	8.4	11.9	15.2	7.2	32.4	37.3
Belgian Congo.....	46.5	53.4	57.4	36.3	109.9	114.7
British East Africa, total ⁴	16.8	10.1	8.3	22.4	39.1	37.6
British West Africa, total ⁴	14.0	19.5	22.2	82.4	87.6	91.7
Egypt.....	50.0	78.5	96.6	9.4	25.4	14.6
Ethiopia.....	3.4	5.4	4.5	8.3	31.2	24.3
French Morocco.....	27.8	31.2	34.5	5.8	11.8	10.4
French West Africa, total ⁵	33.2	24.8	30.3	2.4	44.5	38.4
Liberia.....	51.5	22.2	30.4	10.8	39.8	43.3
Rhodesia and Nyasaland, Federation of.....	9.6	12.2	15.6	15.3	66.3	40.0
Union of South Africa.....	257.4	260.6	261.0	116.4	95.5	110.9
STERLING AREA						
All sterling countries.....	1,760.1	2,029.1	2,211.7	1,156.0	1,801.8	1,944.1

¹ Excluding "special category" exports not available by country of destination. ² Germany prior to 1952. ³ Israel includes Palestine prior to 1954. ⁴ The Republic and North Korea prior to 1952. ⁵ British Somaliland, Seychelles and Mauritius and dependencies, and other British East Africa. ⁶ Gold Coast, Nigeria, and British West Africa, n.e.c. ⁷ Cameroun, French Equatorial Africa, and other French West Africa.

Balance of Payments of the U. S., 1949-56 (in millions of dollars)

Source: Department of Commerce.

Item	1949	1950	1951	1952	1954	1955	1956
Exports of goods and services, total.....	16,033	14,396	20,282	20,661	20,896	21,848	26,123
Military transfers under aid program.....	210	526	1,470	2,603	3,132	2,146	2,605
Other goods and services.....	15,823	13,870	18,812	18,058	17,764	19,702	23,518
Imports of goods and services.....	9,661	12,053	15,068	15,688	15,872	17,656	19,810
Merchandise, adjusted (excl. military expenditures).....	6,879	9,108	11,202	10,838	10,304	11,490	12,791
Transportation.....	700	818	974	1,115	1,001	1,179	1,432
Travel.....	678	727	722	811	958	1,095	1,275
Miscellaneous services.....	450	479	545	577	595	621	784
Military expenditures.....	621	576	1,270	1,957	2,595	2,767	2,910
Income on investments.....	333	345	355	390	419	504	618
Balance on goods and services.....	6,372	2,343	5,214	4,973	5,024	4,192	6,313
Net foreign payments.....	-5,839	-4,544	-4,987	-5,137	-5,290	-4,576	-4,937
Balance on goods, services and net foreign payments.....	533	-2,201	227	-164	-266	-384	1,376
U. S. capital, net [outflow of funds (-)], total.....	-1,205	-1,421	-1,224	-1,578	-1,528	-1,241	-3,606
Foreign capital, net [outflow of funds (-)], total.....	72	1,912	578	1,612	1,459	1,463	1,844
Gold sales [purchases (-)].....	-164	1,743	-53	-379	298	40	-306
Foreign capital and gold, total.....	-92	3,655	525	1,233	1,757	1,503	1,538
Errors and omissions.....	764	-33	472	509	37	122	692

Loans of the International Bank¹ (in millions of dollars)

Source: International Bank for Reconstruction and Development.

Country	No. of loans	Original amount	Net amount ²	Country	No. of loans	Original amount	Net amount ²
Africa: Algeria.....	1	\$ 10.0	\$ 10.0	Europe (cont.): Iceland....	5	\$ 5.9	\$ 5.9
Belgian Congo.....	1	40.0	40.0	Italy.....	4	164.6	163.0
East Africa.....	1	24.0	24.0	Luxemburg.....	1	12.0	11.8
Ethiopia.....	4	23.5	23.5	Netherlands.....	10	244.0	236.5
French West Africa.....	1	7.5	7.1	Norway.....	3	75.0	75.0
Rhodesia & Nyasaland.....	3	122.0	122.0	Turkey.....	6	63.4	60.9
Ruanda-Urundi.....	1	4.8	4.8	Yugoslavia.....	3	60.7	60.7
Union of South Africa.....	5	135.2	135.2	Western Hemisphere:			
Asia: Burma.....	2	19.4	19.4	Brazil.....	10	194.1	169.1
Ceylon.....	1	19.1	19.1	Chile.....	5	52.3	51.9
India.....	11	250.1	233.8	Colombia.....	11	111.3	111.2
Iran.....	1	75.0	75.0	Costa Rica.....	1	3.0	3.0
Iraq.....	1	12.8	6.3	Ecuador.....	2	13.5	13.5
Japan.....	7	77.9	76.0	El Salvador.....	2	23.6	23.6
Lebanon.....	1	27.0	27.0	Guatemala.....	1	18.2	18.2
Pakistan.....	6	77.3	77.3	Haiti.....	1	2.6	2.6
Thailand.....	5	40.8	40.8	Honduras.....	1	4.2	4.2
Australasia: Australia.....	6	317.7	317.7	Mexico.....	6	160.8	141.3
Europe: Austria.....	4	53.0	53.0	Nicaragua.....	10	23.0	23.0
Belgium.....	3	66.0	66.0	Panamá.....	3	7.4	6.8
Denmark.....	1	40.0	40.0	Paraguay.....	1	5.0	5.0
Finland.....	6	65.3	65.1	Peru.....	8	41.0	40.9
France.....	1	250.0	250.0	Uruguay.....	3	64.0	64.0
				Total.....	170	3,108.0	3,025.1

¹ As of June 30, 1957. ² With cancellations and refundings deducted.

Par Values of Member Currencies¹

Source: International Monetary Fund.

Member	Currency	U. S. cents per currency unit	Currency units per U. S. dollar	Member	Currency	U. S. cents per currency unit	Currency units per U. S. dollar
Australia.....	Pound	224.000	0.446 429	Indonesia.....	Rupiah	(3)	(3)
Austria.....	Schilling	3.846 15	26.000 0	Iran.....	Rial	1.320 13	75.750 0
Belgium.....	Franc	2.000 00	50.000 0	Iraq.....	Dinar	280.000	0.357 143
Bolivia.....	Boliviano	0.526 316	190.000	Israel.....	Pound	55.555 6	1.800 00
Brazil.....	Cruzeiro	5.405 41	18.500 0	Italy.....	Lira	(3)	(3)
Burma.....	Kyat	21.000 0	4.761 90	Japan.....	Yen	0.277 778	360.000
Canada ²	Dollar			Jordan.....	Dinar	280.000	0.357 143
Ceylon.....	Rupee	21.000 0	4.761 90	Korea.....	Hwan	(3)	(3)
Chile.....	Peso	0.909 091	110.000	Lebanon.....	Pound	45.631 3	2.191 48
China.....	Yuan	(3)	(3)	Luxemburg.....	Franc	2.000 00	50.000 0
Colombia.....	Peso	51.282 5	1.949 98	Mexico.....	Peso	8.000 00	12.500 0
Costa Rica.....	Colón	17.809 4	5.615 00	Netherlands.....	Guilder	26.315 8	3.800 00
Cuba.....	Peso	100.000	1.000 00	Nicaragua.....	Córdoba	14.2857	7.000 00
Denmark.....	Krone	14.477 8	6.907 14	Norway.....	Krone	14.000 0	7.142 86
Dominican Republic.....	Peso	100.000	1.000 00	Pakistan.....	Rupee	21.000 0	4.761 90
Ecuador.....	Sucré	6.666 67	15.000 0	Panamá.....	Balboa	100.000	1.000 00
Egypt.....	Pound	287.156	0.348 242	Paraguay.....	Guaraní	1.666 67	60.000 0
El Salvador.....	Colón	40.000 0	2.500 00	Peru.....	Sol	(4)	(4)
Ethiopia.....	Dollar	40.250 0	2.484 47	Philippines.....	Peso	50.000 0	2.000 00
Finland.....	Markka	0.434 783	230.000	Sweden.....	Krona	19.330 4	5.173 21
France.....	Franc	(3)	(3)	Syria.....	Pound	45.631 3	2.191 48
Germany, Federal Republic of.....	Deutsche Mark	23.809 5	4.200 00	Thailand.....	Baht	(3)	(3)
Greece.....	Drachma	(3)	(3)	Turkey.....	Lira	35.714 3	2.800 00
Guatemala.....	Quetzal	100.000	1.000 00	Union of South Africa.....	Pound	280.000	0.357 143
Haiti.....	Gourde	20.000 0	5.000 00	United Kingdom.....	Pound	280.000	0.357 143
Honduras.....	Lempira	50.000 0	2.000 00	United States.....	Dollar	100.000	1.000 00
Iceland.....	Króna	6.140 36	16.285 7	Uruguay.....	Peso	(3)	(3)
India.....	Rupee	21.000 0	4.761 90	Venezuela.....	Bolívar	29.850 7	3.350 00
				Yugoslavia.....	Dinar	0.333 333	300.000

¹ As of July 15, 1957. ² No fixed value. ³ Par value not yet established. ⁴ In Nov. 1949, Peru introduced a new exchange system, but no agreement on a new par value has been reached.

LEADING COUNTRIES IN RICHES AND RESOURCES

Source: *Encyclopaedia Britannica*.

The designation "nd" means that no data are available. In such cases, the relative rank of the nation is estimated.

Mineral and Metal Production

ANTIMONY ORE (thousands of metric tons, metal content, 1955)

1. U. of So. Africa ..	14.2
2. China	12.0 ¹
3. Bolivia	5.4
4. Mexico	3.8
5. Turkey	1.7
6. Yugoslavia	1.6
7. Czechoslovakia ..	1.6 ²
8. Algeria	1.0
9. Canada .....	.9
10. Peru .....	.9

¹ Estimate. ² 1954.

BAUXITE (thousands of metric tons, 1955)

1. Surinam	3,060
2. West Indies	2,570
3. British Guiana ..	2,474
4. United States	1,847 ¹
5. France	1,493 ²
6. Hungary	1,290
7. U.S.S.R.	1,000 ¹
8. Yugoslavia	791
9. Greece	500
10. Fr. West Africa ..	479

¹ Estimate. ² Including Saar.

CHROMITE (thousands of metric tons, 1955)

1. Turkey	649.1
2. U.S.S.R.	600.0 ¹
3. Philippines	598.1
4. U. of So. Africa ..	541.9
5. So. Rhodesia	407.5
6. United States	139.0
7. Yugoslavia	126.2
8. West Indies	74.2
9. India	65.0 ¹
10. New Caledonia ..	46.1

¹ Estimate.

COAL (millions of metric tons, 1956)

1. United States	479.1 ¹
2. U.S.S.R.	429.6 ¹
3. United Kingdom ..	225.6 ²
4. West Germany	134.4
5. Poland	95.1
6. China	94.0 ³
7. Czechoslovakia ..	62.8 ³
8. France	55.1
9. Japan	46.6
10. India	40.1

¹ Including lignite. ² Excluding Northern Ireland. ³ 1955.

COPPER (thousands of metric tons, smelter, 1956)

1. United States ..	1,155.0 ¹
2. Chile	489.6 ²
3. No. Rhodesia ..	385.2
4. U.S.S.R.	350.0 ³
5. Canada	300.0 ²
6. West Germany ..	297.1 ¹
7. Belgian Congo ..	247.3 ⁴
8. United Kingdom ..	222.0 ¹
9. Belgium	168.8 ⁵
10. Japan	126.2 ⁵

¹ Including secondary copper. ² Refined copper. ³ 1955 estimate. ⁴ Exports. ⁵ Secondary and refined copper.

GOLD (thousands of fine oz., refinery production, 1955)

1. U. of So. Africa ..	14,602
2. U.S.S.R.	9,000 ¹
3. Canada	4,556
4. United States	1,877
5. Australia	1,049
6. Ghana	687
7. So. Rhodesia	535
8. Philippines	419
9. Mexico	383
10. Colombia	381

¹ Estimate.IRON ORE (millions of metric tons, 1956)¹

1. United States	98.9
2. U.S.S.R.	78.0
3. France	52.7
4. Canada	20.0 ²
5. Sweden	18.9
6. West Germany	16.9
7. United Kingdom ..	16.5
8. Venezuela	11.0
9. China	8.7
10. Luxembourg	7.6

¹ Approximate metal content: U. S., 50%; U.S.S.R., unknown; France, 35%; Canada, 55%; Sweden, 60%; West Germany, 30%; U. K., 30%; Venezuela, 65%; China, unknown; Luxembourg, 30%. ² Shipments only.

LEAD (thousands of metric tons, refined, 1956)

1. United States	556.8
2. U.S.S.R.	290.0 ¹
3. Australia	240.0
4. Mexico	199.2 ²
5. Canada	134.3
6. West Germany	116.5 ³
7. Belgium	102.2
8. United Kingdom ..	96.0 ⁴
9. France	85.7 ⁵

10. Yugoslavia

75.7

¹ Estimate. ² Lead content of ores mined. ³ Not refined. ⁴ Mostly secondary lead. ⁵ Including secondary lead.

MANGANESE ORE (thousands of metric tons, 1955)

1. U.S.S.R.	4,400 ¹
2. India	1,545
3. U. of So. Africa ..	589
4. Ghana	548
5. Belgian Congo	462
6. Morocco	411 ²
7. Brazil	380
8. Rumania	355 ¹
9. United States	259 ¹
10. Cuba	244

¹ Estimate. ² Former French section only.

PETROLEUM, CRUDE (millions of bbls., 1956)

1. United States	2,535
2. Venezuela	889
3. U.S.S.R.	590
4. Kuwait	400 ¹
5. Saudi Arabia	361
6. Iraq	223
7. Iran	198
8. Canada	171
9. Indonesia	95
10. Mexico	91

¹ Not including neutral zone.

PIG IRON AND FERRO-ALLOYS (millions of metric tons, 1956)

1. United States	69.9 ¹
2. U.S.S.R.	36.0
3. West Germany	20.7 ²
4. United Kingdom ..	13.4 ¹
5. France	11.7
6. Japan	6.0
7. Belgium	5.8
8. Poland	3.5
9. Canada	3.4
10. Luxembourg	3.3

¹ Excluding electric furnace production. ² Including Saar.

SILVER (millions of fine oz., smelter, 1955)

1. Mexico	48.0
2. United States	36.5
3. Canada	27.9
4. U.S.S.R.	25.0 ¹
5. Peru	23.0
6. Australia	14.6
7. Japan	5.9
8. Bolivia	5.9

9. East Germany	4.5
10. Belgian Congo	4.1

¹ Estimate.**TIN ORE** (thousands of metric tons, 1955)

1. Malaya	62.4
2. Indonesia	34.0
3. Bolivia	28.4
4. Belgian Congo	15.6
5. China	11.5
6. Thailand	11.3
7. Nigeria	7.4
8. Australia	2.1
9. U. of So. Africa	1.3
10. Burma	1.2

URANINUM

No production data are generally available. The AEC in Dec. 1956, however, announced U. S. figures for the first time,

estimating total U. S. reserves at 60,000,000 tons and total U. S. production at 3,000,000 tons of raw ore in 1956; this amounted to only 6,000 tons of usable uranium concentrate. Canada's reserves were estimated at 225,000,000 tons of ore. The most important deposits of uranium are probably in the Belgian Congo; also the Northwest Territories and elsewhere in Canada; and the Colorado plateau area of Colorado, New Mexico, Arizona and Utah in the United States. Deposits have also been found or reported in Alaska, Australia, Bolivia, Brazil, Bulgaria, Burma, Ceylon, Chile, China (Manchuria), Czechoslovakia, England, Ethiopia, Finland, France, Germany, Greenland,

Hungary, India, Indonesia, Iran, Japan, Madagascar, Mexico, Mozambique, Nigeria, Norway, Panama, Philippines, Portugal, Rumania, Sardinia, South Africa, Spain, Sweden and the U.S.S.R.

ZINC (thousands of metric tons, smelter, 1956)

1. United States	987.1 ¹
2. U.S.S.R.	300.0 ²
3. Mexico	248.4 ³
4. Canada	231.6
5. Belgium	230.6 ¹
6. West Germany	205.1 ¹
7. Poland	156.0 ²
8. France	136.6
9. Japan	135.1 ⁴
10. Australia	106.4

¹ Including secondary zinc. ² 1955 estimate. ³ Zinc content of ores.⁴ Refined, including secondary zinc.**Agriculture****BARLEY** (thousands of metric tons, 1956)

1. China	18,360
2. U.S.S.R.	nd
3. United States	8,061
4. France	6,700
5. Canada	6,048
6. Turkey	2,900
7. India	2,765
8. United Kingdom	2,635
9. Japan	2,340
10. West Germany	2,310

BUTTER (thousands of metric tons, factory production, 1956)

1. United States	640
2. U.S.S.R.	436
3. France	305 ¹
4. West Germany	300
5. Australia	209 ²
6. New Zealand	203 ²
7. Denmark	166
8. Canada	137
9. Sweden	83
10. Netherlands	77

¹ 1954. ² Year ending June 30, 1956.**CATTLE** (number in millions, various dates)

1. India	158.9 ¹
2. United States	97.5 ²
3. U.S.S.R.	67.1 ³
4. Brazil	63.6 ³
5. Argentina	49.0 ²
6. Pakistan	31.1 ⁴
7. China	28.8 ⁵
8. Ethiopia	21.0 ⁶
9. France	17.8 ²
10. Australia	16.5 ²

¹ 1955-56. ² 1956. ³ 1955. ⁴ 1953-54. ⁵ 1953.**CHEESE** (thousands of metric tons, factory, 1956)

1. United States	632
2. France	350 ¹
3. Italy	348 ¹
4. West Germany	157
5. Netherlands	153
6. Argentina	127 ²
7. U.S.S.R.	105 ¹
8. United Kingdom	101 ³
9. New Zealand	98 ⁴
10. Denmark	85

¹ 1955. ² 1955; including farm cheese. ³ Including farm cheese. ⁴ Year ending June 30, 1956.**COTTON, GINNED** (thousands of bales, 500 lb., gross, 1956)

1. United States	13,200
2. U.S.S.R.	nd
3. India	4,200
4. China	3,100 ¹
5. Mexico	1,800
6. Brazil	1,700 ²
7. Egypt	1,500
8. Pakistan	1,400
9. Turkey	625
10. Argentina	550

¹ 1954; including Manchuria. ² 1955.**FORESTS** (millions of acres, latest data available, 1957)¹

1. U.S.S.R.	2,275
2. Brazil	975
3. Canada	835
4. United States	825 ²
5. Fr. West Africa	420
6. Fr. Eq. Africa	340 ³
7. Indonesia	300

8. Belgian Congo	250
9. Sudan	225
10. China	210

¹ Of present or potential value. ² Including Alaska. ³ Including savannah.**HOGS** (number in millions, 1955)

1. China	88.0 ¹
2. United States	55.1 ²
3. U.S.S.R.	52.2
4. Brazil	36.6
5. West Germany	14.6
6. Poland	10.9
7. East Germany	9.0
8. Mexico	7.9 ²
9. France	7.7 ²
10. Hungary	6.1 ²

¹ 1954-55. ² 1956.**LAND, ARABLE** (millions of ac., latest data available, 1957)¹

1. U.S.S.R.	555
2. United States	478
3. India	325 ²
4. China	250
5. Belgian Congo	120 ³
6. Canada	97
7. Argentina	75
8. Fr. Eq. Africa	74
9. Pakistan	60
10. France	52

¹ Actually planted in crops, plus temporary meadows and pastures. ² Including Kashmir. ³ Including inland water.**MEAT** (thousands of metric tons, 1956)¹

1. United States	12,084
2. U.S.S.R.	2,219 ²

3. Argentina	2,174 ²
4. West Germany	1,928
5. France	1,739 ³
6. United Kingdom	1,628
7. Brazil	1,375 ⁴
8. Poland	1,240 ⁶
9. Australia	1,238 ³
10. Canada	780 ³

¹ Chiefly beef, veal, mutton, lamb and pork produced in slaughtering houses or packing plants. ² 1955. ³ Inspected slaughter. ⁴ 1954. ⁵ 1950. ⁶ Year ending June 30, 1956; including farm slaughter.

MILK (thousands of metric tons, 1956)

1. United States	57,010
2. U.S.S.R.	40,000 ¹
3. France	18,700 ²
4. West Germany	17,005
5. United Kingdom	9,985 ³
6. Poland	9,900 ²
7. Canada	7,850
8. Australia	6,590 ⁴
9. Netherlands	5,820
10. Denmark	5,063

¹ Rough estimate. ² 1955. ³ Milk sold through "milk marketing schemes." ⁴ Year ending June 30, 1956.

OATS (thousands of metric tons, 1956)

1. United States	16,731
2. U.S.S.R.	nd
3. Canada	8,257
4. France	3,761
5. West Germany	2,451
6. United Kingdom	2,425
7. Poland	2,287 ¹
8. East Germany	1,600 ¹
9. Sweden	1,148
10. Czechoslovakia	966 ²

¹ 1955. ² Average 1949-52.

POTATOES (thousands of metric tons, 1956)

1. U.S.S.R.	147,800 ¹
2. West Germany ..	26,756

3. Poland	26,400 ³
4. France	18,330
5. East Germany ..	16,750 ²
6. United States ..	11,074
7. United Kingdom ..	7,443
8. Czechoslovakia ..	6,780 ³
9. Spain	4,081 ³
10. Netherlands	3,531

¹ 1955 plan. ² 1955. ³ Average 1949-52.

RICE (thousands of metric tons, 1956-57)

1. China	67,200
2. India	40,900
3. Pakistan	13,700
4. Japan	13,200
5. Indonesia	11,300 ¹
6. Thailand	8,010
7. Burma	6,500
8. Brazil	3,500 ¹
9. Philippines	3,400
10. South Korea	3,180

¹ 1955-56.

RUBBER (thousands of metric tons, 1956)

1. United States	1,097 ¹
2. Indonesia	697
3. Malaya	637
4. U.S.S.R.	248 ²
5. Thailand	136 ³
6. Canada	127 ¹
7. Cambodia, Viet-nam	102
8. Ceylon	97
9. Sarawak	41
10. Liberia	39 ³

¹ Synthetic only. ² 1951; synthetic only. ³ Net exports.

SHEEP (number in millions, various dates)

1. Australia	139.0 ¹
2. U.S.S.R.	124.9 ²
3. Argentina	47.4 ¹
4. China	42.1 ³
5. New Zealand	39.1 ³

6. India	38.7 ³
7. U. of So. Africa ..	37.1 ⁴
8. United States	31.1 ¹
9. Turkey	26.4 ²
10. Uruguay	22.9 ¹

¹ 1956. ² 1955. ³ 1955-56. ⁴ 1954.

SUGAR (thousands of metric tons, raw value, 1956-57)

1. Cuba	5,100
2. U.S.S.R.	4,000
3. Brazil	2,400
4. India	2,200
5. United States	2,200
6. France	1,500
7. West Germany	1,300
8. Philippines	1,100
9. Puerto Rico	1,100
10. Hawaii	1,100

WHEAT (thousands of metric tons, 1956)

1. United States ..	27,140
2. U.S.S.R.	nd
3. China	25,000
4. Canada	14,637
5. Italy	8,681
6. India	8,482
7. Argentina	7,130
8. Turkey	6,612 ¹
9. France	5,695
10. Spain	4,215 ¹

¹ Including spelt.

WOOL (thousands of metric tons, greasy basis, 1956)

1. Australia	634
2. New Zealand	237
3. Argentina	165
4. U.S.S.R.	nd
5. U. of So. Africa ..	142
6. United States	137
7. Uruguay	90
8. China	nd
9. United Kingdom ..	49 ¹
10. Spain	43 ¹

¹ 1954-55.

Industry, Trade, Communications

AIRLINES (millions of passenger miles flown, monthly average, 1956)

1. United States	2,301
2. France	199
3. United Kingdom ..	173
4. U.S.S.R.	nd
5. Canada	129
6. Australia	92 ¹
7. Netherlands	89
8. Brazil	87 ¹
9. Mexico	78 ¹
10. Belgium	35

¹ 1955.

ALUMINUM (thousands of metric tons, 1956)

1. United States ..	1,849.2 ¹
2. Canada	562.8
3. U.S.S.R.	535.0
4. West Germany ..	234.6 ¹
5. France	182.1 ¹
6. United Kingdom ..	125.3 ¹
7. Norway	92.7
8. Japan	80.5 ¹
9. Austria	70.8
10. Italy	63.4

¹ Including secondary aluminum.

ELECTRICITY (millions of kwh, monthly average, 1956)

1. United States ..	50,049
2. U.S.S.R.	16,000
3. United Kingdom ..	7,263 ¹
4. West Germany ..	7,022 ²
5. Canada	6,807
6. Japan	6,007
7. France	4,229
8. Italy	3,313
9. East Germany ..	2,599
10. Sweden	2,286

¹ Excluding Northern Ireland and part of Scotland. ² Not including Saar.

EMPLOYMENT INDEX (non-agricultural, 1956; 1953 = 100)¹

1. Yugoslavia	123 ²
2. Japan	119
3. Austria	114
4. West Germany	111 ³
5. Luxembourg	109 ³
6. Australia	108
7. Canada	108
8. New Zealand	106 ²
9. United States	105
10. United Kingdom	104 ⁴

¹ Data on U.S.S.R. and satellites not included. ² 1955. ³ Incomplete coverage. ⁴ Excluding Northern Ireland.

EXPORT INDEX (1956; 1953 = 100)¹

1. Japan	208
2. Mexico	190 ²
3. Yugoslavia	174 ³
4. West Germany	165
5. Austria	160
6. Italy	147
7. Philippines	134
8. Norway	133
9. Netherlands	130
10. Belgium	128

¹ Volume of exports after eliminating price change effects; principal nations only; data on U.S.S.R. and satellites not included. ² Effects of price changes not eliminated.

INDUSTRIAL PRODUCTION INDEX (1956; 1953 = 100)

1. Yugoslavia	145
2. Japan	141
3. U.S.S.R.	141
4. West Germany	139 ¹
5. Austria	138
6. Greece	134 ²
7. France	133 ¹
8. Finland	130
9. Italy	128
10. India	126

¹ Excluding construction. ² Excluding mining and gas manufacture.

MERCHANT FLEETS (millions of gross tons, 1956)¹

1. United States	24.8 ²
2. British Commonwealth	20.0
3. Norway	7.6
4. Liberia	5.6 ³
5. Italy	3.9
6. Panamá	3.9 ³
7. France	3.7
8. Netherlands	3.5
9. Japan	3.5
10. Sweden	2.7

¹ Ships of 1,000 gross tons or more. ² Excluding Great Lakes shipping; including 14,220,000 tons in reserve. ³ Mostly vessels of other nations, registered under "flag of convenience."

MOTOR VEHICLES (production in thousands, 1956)

1. United States	6,921 ¹
2. West Germany ...	1,072
3. United Kingdom ...	1,005
4. France	827
5. Canada	474
6. U.S.S.R.	465
7. Italy	316
8. Japan	97
9. Australia	62 ²
10. Sweden	50 ²

¹ Factory sales. ² 1955.

RAILWAYS (millions of metric freight-tons carried, monthly average, 1956)

1. United States	205.4 ¹
2. U.S.S.R.	105.6 ²
3. West Germany ...	25.0
4. Poland	24.7 ³
5. United Kingdom ...	23.5 ⁴
6. France	17.0
7. Japan	12.7 ²
8. Canada	12.7 ²
9. India	9.5 ⁵
10. Belgium	5.8 ⁶

¹ Class I railways only. ² 1955. ³ 1954. ⁴ Excluding Northern Ireland.

land. ⁵ Year ending March 30, 1956. ⁶ Carload lots only.

RETAIL COMMERCE (INTERNAL) INDEX (1956; 1953 = 100)¹

1. Japan	146 ²
2. Yugoslavia	143 ³
3. Mexico	140 ³
4. Austria	136
5. Australia	134 ⁴
6. Netherlands	133
7. West Germany ...	132
8. Argentina	130
9. Finland	128 ⁵
10. Belgium	124

¹ Principal nations only; data on U.S.S.R. and satellites not included. ² Department stores only. ³ 1955. ⁴ Year ending June 30, 1956. ⁵ Co-operative organizations.

STEEL, CRUDE (millions of metric tons, 1956)

1. United States	104.5
2. U.S.S.R.	48.6
3. West Germany ...	25.9 ¹
4. United Kingdom ...	21.1
5. France	13.4
6. Japan	11.1
7. Belgium	6.4
8. Italy	5.8
9. Poland	5.0
10. Czechoslovakia ...	4.9 ²

¹ Including Saar. ² 1955 estimate.

TELEPHONES (number per 100 pop., 1956)

1. United States	33.7
2. Sweden	30.0
3. Canada	26.3
4. New Zealand	24.6
5. Switzerland	24.3
6. Denmark	20.1
7. Australia	17.8
8. Norway	17.2
9. Iceland	17.1
10. United Kingdom ...	13.5

Human and Military Resources

BIRTH RATE, HIGHEST ANNUAL (per 1,000 pop., 1956)¹

1. Mexico	46.2
2. China	nd
3. Iran	34.6 ²
4. Thailand	34.2 ³
5. India	30.5 ⁴
6. Poland	29.0 ²
7. Canada	28.1 ⁵
8. Yugoslavia	26.1
9. U.S.S.R.	25.6 ²
10. U. of So. Africa ...	25.4 ⁶

¹ Larger nations only; all Central American and most smaller South

American and Caribbean nations have annual birth rates usually exceeding 35.0 (Guatemala led in 1956 with 48.6). Other smaller nations usually exceeding 35.0 include Burma, Egypt, Formosa, Ceylon, Jordan and Malaya. ² 1955. ³ 1954. ⁴ 1955; registration area only. ⁵ Excluding Yukon and Northwest Territories. ⁶ White population only.

DEATH RATE, LOWEST ANNUAL (per 1,000 pop., 1956)¹

1. Peru	6.5
2. Netherlands	7.8
3. Japan	8.0
4. Iran	8.0 ²

5. Canada	8.2 ³
6. U.S.S.R.	8.4 ²
7. U. of So. Africa ...	8.8 ⁴
8. Australia	9.1 ⁵
9. United States	9.4
10. Czechoslovakia ...	9.6 ²

¹ Following smaller nations not included: Syria, 5.5 (excluding nomads and semi-nomads); Israel, 6.3 (Jewish population only); Uruguay, 7.0; Puerto Rico, 7.3; Greece, 7.4; Jordan, 8.4; Norway, 8.5; Formosa, 8.6 (1955); Denmark, 8.9; Finland, 9.0; Bulgaria, 9.0 (1955); New Zealand, 9.0 (excluding Maoris); Dominican Republic, 9.1; Costa Rica, 9.5; Sweden, 9.6. ² 1955. ³ Excluding Yukon and Northwest Territories. ⁴ White population only. ⁵ Excluding full-blooded aborigines.

ARMED FORCES (army, navy, air; estimated strength in thousands, 1957)

1. U.S.S.R.	3,400
2. United States	2,800
3. China	2,700
4. United Kingdom .	700
5. France	700
6. South Korea	700 ¹
7. Yugoslavia	650 ²

8. North Korea	490 ³
9. Poland	370 ⁴
10. Turkey	300
¹ 1958. ² 1954. ³ 1956; not including about 300,000 Chinese. ⁴ 1956; including about 100,000 in forces of the interior.	

NAVIES (number of warships, 1956)¹

1. United States	575
2. U.S.S.R.	185

3. United Kingdom ...	109
4. France	36
5. Spain	23
6. Argentina	22
7. Sweden	19
8. Netherlands	15
9. Canada	14
10. Italy	12

¹ Dec. 1956; excluding submarines, frigates and escort craft; estimated number of submarines on that date: U.S.S.R., 475; U.S., 204; United Kingdom, 54; Sweden, 24; France, 14; China (Communist), 13.

FEDERAL INCOME TAX

If you are a citizen or a resident of the United States, and if your gross income for the year amounts to \$600 or more, you are required to file a return. This requirement applies to minors, as well as adults, and must be met even if you do not pay a tax.

If you are more than 65 years old, you are required to file only if your gross income is \$1,200 or more.

You must pay part of your tax in installments in the year in which you earned the income. This is the "pay-as-you-go" system. You are generally required to pay the rest of your tax when you file your return. It may turn out that you don't owe any additional tax when you file your

return, or you may even be entitled to a refund, in which case the refund will be paid to you automatically after your return is filed.

The "pay-as-you-go" system works in two ways, through withholding and declaration of estimated tax. You may be subject to either or both of these requirements.

If you are married, you and your wife are allowed to report your combined income and your combined deductions on a single return. This is called a joint return. Your combined income is then taxed as though half were yours and half hers. This will usually result in a lower tax.

Withholding Table for Employees Paid Weekly

If the wages are—		And the number of withholding exemptions claimed is—										
		0	1	2	3	4	5	6	7	8	9	10 or more
At least	But less than	The amount of tax to be withheld shall be—										
		18% of wages	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0.....	\$13.....	\$2.40	.10	0	0	0	0	0	0	0	0	0
\$13.....	\$14.....	2.60	.30	0	0	0	0	0	0	0	0	0
\$14.....	\$15.....	2.80	.50	0	0	0	0	0	0	0	0	0
\$15.....	\$16.....	3.00	.70	0	0	0	0	0	0	0	0	0
\$16.....	\$17.....	3.20	.80	0	0	0	0	0	0	0	0	0
\$17.....	\$18.....	3.30	1.00	0	0	0	0	0	0	0	0	0
\$18.....	\$19.....	3.50	1.20	0	0	0	0	0	0	0	0	0
\$19.....	\$20.....											
\$20.....	\$21.....	3.70	1.40	0	0	0	0	0	0	0	0	0
\$21.....	\$22.....	3.90	1.60	0	0	0	0	0	0	0	0	0
\$22.....	\$23.....	4.10	1.70	0	0	0	0	0	0	0	0	0
\$23.....	\$24.....	4.20	1.90	0	0	0	0	0	0	0	0	0
\$24.....	\$25.....	4.40	2.10	0	0	0	0	0	0	0	0	0
\$25.....	\$26.....	4.60	2.30	0	0	0	0	0	0	0	0	0
\$26.....	\$27.....	4.80	2.50	.20	0	0	0	0	0	0	0	0
\$27.....	\$28.....	5.00	2.60	.30	0	0	0	0	0	0	0	0

If the wages are—		And the number of withholding exemptions claimed is—											
At least	But less than	0	1	2	3	4	5	6	7	8	9	10 or more	
		The amount of tax to be withheld shall be—											
\$28.....	\$29.....	\$5.10	\$2.80	\$5.50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$29.....	\$30.....	5.30	3.00	.70	0	0	0	0	0	0	0	0	
\$30.....	\$31.....	5.50	3.20	.90	0	0	0	0	0	0	0	0	
\$31.....	\$32.....	5.70	3.40	1.10	0	0	0	0	0	0	0	0	
\$32.....	\$33.....	5.90	3.50	1.20	0	0	0	0	0	0	0	0	
\$33.....	\$34.....	6.00	3.70	1.40	0	0	0	0	0	0	0	0	
\$34.....	\$35.....	6.20	3.90	1.60	0	0	0	0	0	0	0	0	
\$35.....	\$36.....	6.40	4.10	1.80	0	0	0	0	0	0	0	0	
\$36.....	\$37.....	6.60	4.30	2.00	0	0	0	0	0	0	0	0	
\$37.....	\$38.....	6.80	4.40	2.10	0	0	0	0	0	0	0	0	
\$38.....	\$39.....	6.90	4.60	2.30	0	0	0	0	0	0	0	0	
\$39.....	\$40.....	7.10	4.80	2.50	.20	0	0	0	0	0	0	0	
\$40.....	\$41.....	7.30	5.00	2.70	.40	0	0	0	0	0	0	0	
\$41.....	\$42.....	7.50	5.20	2.90	.50	0	0	0	0	0	0	0	
\$42.....	\$43.....	7.70	5.30	3.00	.70	0	0	0	0	0	0	0	
\$43.....	\$44.....	7.80	5.50	3.20	.90	0	0	0	0	0	0	0	
\$44.....	\$45.....	8.00	5.70	3.40	1.10	0	0	0	0	0	0	0	
\$45.....	\$46.....	8.20	5.90	3.60	1.30	0	0	0	0	0	0	0	
\$46.....	\$47.....	8.40	6.10	3.80	1.40	0	0	0	0	0	0	0	
\$47.....	\$48.....	8.60	6.20	3.90	1.60	0	0	0	0	0	0	0	
\$48.....	\$49.....	8.70	6.40	4.10	1.80	0	0	0	0	0	0	0	
\$49.....	\$50.....	8.90	6.60	4.30	2.00	0	0	0	0	0	0	0	
\$50.....	\$51.....	9.10	6.80	4.50	2.20	0	0	0	0	0	0	0	
\$51.....	\$52.....	9.30	7.00	4.70	2.30	0	0	0	0	0	0	0	
\$52.....	\$53.....	9.50	7.10	4.80	2.50	.20	0	0	0	0	0	0	
\$53.....	\$54.....	9.60	7.30	5.00	2.70	.40	0	0	0	0	0	0	
\$54.....	\$55.....	9.80	7.50	5.20	2.90	.60	0	0	0	0	0	0	
\$55.....	\$56.....	10.00	7.70	5.40	3.10	.80	0	0	0	0	0	0	
\$56.....	\$57.....	10.20	7.90	5.60	3.20	.90	0	0	0	0	0	0	
\$57.....	\$58.....	10.40	8.00	5.70	3.40	1.10	0	0	0	0	0	0	
\$58.....	\$59.....	10.50	8.20	5.90	3.60	1.30	0	0	0	0	0	0	
\$59.....	\$60.....	10.70	8.40	6.10	3.80	1.50	0	0	0	0	0	0	
\$60.....	\$62.....	11.00	8.70	6.40	4.10	1.70	0	0	0	0	0	0	
\$62.....	\$64.....	11.30	9.00	6.70	4.40	2.10	0	0	0	0	0	0	
\$64.....	\$66.....	11.70	9.40	7.10	4.80	2.50	.20	0	0	0	0	0	
\$66.....	\$68.....	12.10	9.80	7.40	5.10	2.80	.50	0	0	0	0	0	
\$68.....	\$70.....	12.40	10.10	7.80	5.50	3.20	.90	0	0	0	0	0	
\$70.....	\$72.....	12.80	10.50	8.20	5.90	3.50	1.20	0	0	0	0	0	
\$72.....	\$74.....	13.10	10.80	8.50	6.20	3.90	1.60	0	0	0	0	0	
\$74.....	\$76.....	13.50	11.20	8.90	6.60	4.30	2.00	0	0	0	0	0	
\$76.....	\$78.....	13.90	11.60	9.20	6.90	4.60	2.30	0	0	0	0	0	
\$78.....	\$80.....	14.20	11.90	9.60	7.30	5.00	2.70	.40	0	0	0	0	
\$80.....	\$82.....	14.60	12.30	10.00	7.70	5.30	3.00	.70	0	0	0	0	
\$82.....	\$84.....	14.90	12.60	10.30	8.00	5.70	3.40	1.10	0	0	0	0	
\$84.....	\$86.....	15.30	13.00	10.70	8.40	6.10	3.80	1.50	0	0	0	0	
\$86.....	\$88.....	15.70	13.40	11.00	8.70	6.40	4.10	1.80	0	0	0	0	
\$88.....	\$90.....	16.00	13.70	11.40	9.10	6.80	4.50	2.20	0	0	0	0	
\$90.....	\$92.....	16.40	14.10	11.80	9.50	7.10	4.80	2.50	.20	0	0	0	
\$92.....	\$94.....	16.70	14.40	12.10	9.80	7.50	5.20	2.90	.60	0	0	0	
\$94.....	\$96.....	17.10	14.80	12.50	10.20	7.90	5.60	3.30	.90	0	0	0	
\$96.....	\$98.....	17.50	15.20	12.80	10.50	8.20	5.90	3.60	1.30	0	0	0	
\$98.....	\$100.....	17.80	15.50	13.20	10.90	8.60	6.30	4.00	1.70	0	0	0	
\$100.....	\$105.....	18.50	16.10	13.80	11.50	9.20	6.90	4.60	2.30	0	0	0	
\$105.....	\$110.....	19.40	17.00	14.70	12.40	10.10	7.80	5.50	3.20	.90	0	0	
\$110.....	\$115.....	20.30	17.90	15.60	13.30	11.00	8.70	6.40	4.10	1.80	0	0	
\$115.....	\$120.....	21.20	18.80	16.50	14.20	11.90	9.60	7.30	5.00	2.70	.40	0	
\$120.....	\$125.....	22.10	19.70	17.40	15.10	12.80	10.50	8.20	5.90	3.60	1.30	0	
\$125.....	\$130.....	23.00	20.60	18.30	16.00	13.70	11.40	9.10	6.80	4.50	2.20	0	

If the wages are—		And the number of withholding exemptions claimed is—										
At least	But less than	0	1	2	3	4	5	6	7	8	9	10 or more
		The amount of tax to be withheld shall be—										
\$130.....	\$135.....	\$23.90	\$21.50	\$19.20	\$16.90	\$14.60	\$12.30	\$10.00	\$7.70	\$5.40	\$3.10	\$80
\$135.....	\$140.....	24.80	22.40	20.10	17.80	15.50	13.20	10.90	8.60	6.30	4.00	1.70
\$140.....	\$145.....	25.70	23.30	21.00	18.70	16.40	14.10	11.80	9.50	7.20	4.90	2.60
\$145.....	\$150.....	26.60	24.20	21.90	19.60	17.30	15.00	12.70	10.40	8.10	5.80	3.50
\$150.....	\$160.....	27.90	25.60	23.30	21.00	18.70	16.40	14.10	11.70	9.40	7.10	4.80
\$160.....	\$170.....	29.70	27.40	25.10	22.80	20.50	18.20	15.90	13.50	11.20	8.90	6.60
\$170.....	\$180.....	31.50	29.20	26.90	24.60	22.30	20.00	17.70	15.30	13.00	10.70	8.40
\$180.....	\$190.....	33.30	31.00	28.70	26.40	24.10	21.80	19.50	17.10	14.80	12.50	10.20
\$190.....	\$200.....	35.10	32.80	30.50	28.20	25.90	23.60	21.30	18.90	16.60	14.30	12.00
\$200 and over.....		18 percent of the excess over \$200 plus—										
		36.00	33.70	31.40	29.10	26.80	24.50	22.20	19.80	17.50	15.20	12.90

Rate Table for Separate Returns

If your taxable income is:

Your tax is:

Not over \$2,000

20% of the taxable income

Over \$ 2,000 but not over \$ 4,000.....	\$ 400, plus 22% of excess over \$ 2,000
Over \$ 4,000 but not over \$ 6,000.....	\$ 840, plus 26% of excess over \$ 4,000
Over \$ 6,000 but not over \$ 8,000.....	\$ 1,360, plus 30% of excess over \$ 6,000
Over \$ 8,000 but not over \$ 10,000.....	\$ 1,960, plus 34% of excess over \$ 8,000
Over \$ 10,000 but not over \$ 12,000.....	\$ 2,640, plus 38% of excess over \$ 10,000
Over \$ 12,000 but not over \$ 14,000.....	\$ 3,400, plus 43% of excess over \$ 12,000
Over \$ 14,000 but not over \$ 16,000.....	\$ 4,260, plus 47% of excess over \$ 14,000
Over \$ 16,000 but not over \$ 18,000.....	\$ 5,200, plus 50% of excess over \$ 16,000
Over \$ 18,000 but not over \$ 20,000.....	\$ 6,200, plus 53% of excess over \$ 18,000
Over \$ 20,000 but not over \$ 22,000.....	\$ 7,260, plus 56% of excess over \$ 20,000
Over \$ 22,000 but not over \$ 26,000.....	\$ 8,380, plus 59% of excess over \$ 22,000
Over \$ 26,000 but not over \$ 32,000.....	\$ 10,740, plus 62% of excess over \$ 26,000
Over \$ 32,000 but not over \$ 38,000.....	\$ 14,460, plus 65% of excess over \$ 32,000
Over \$ 38,000 but not over \$ 44,000.....	\$ 18,360, plus 69% of excess over \$ 38,000
Over \$ 44,000 but not over \$ 50,000.....	\$ 22,500, plus 72% of excess over \$ 44,000
Over \$ 50,000 but not over \$ 60,000.....	\$ 26,820, plus 75% of excess over \$ 50,000
Over \$ 60,000 but not over \$ 70,000.....	\$ 34,320, plus 78% of excess over \$ 60,000
Over \$ 70,000 but not over \$ 80,000.....	\$ 42,120, plus 81% of excess over \$ 70,000
Over \$ 80,000 but not over \$ 90,000.....	\$ 50,220, plus 84% of excess over \$ 80,000
Over \$ 90,000 but not over \$100,000.....	\$ 58,620, plus 87% of excess over \$ 90,000
Over \$100,000 but not over \$150,000.....	\$ 67,320, plus 89% of excess over \$100,000*
Over \$150,000 but not over \$200,000.....	\$111,820, plus 90% of excess over \$150,000*
Over \$200,000.....	\$156,820, plus 91% of excess over \$200,000*

* The tax cannot in any event be more than 87% of taxable income.

Rate Table for Head of Household Returns

If your taxable income is:

Your tax is:

Not over \$2,000

20% of the taxable income

Over \$ 2,000 but not over \$ 4,000.....	\$ 400, plus 21% of excess over \$ 2,000
Over \$ 4,000 but not over \$ 6,000.....	\$ 820, plus 24% of excess over \$ 4,000
Over \$ 6,000 but not over \$ 8,000.....	\$ 1,300, plus 26% of excess over \$ 6,000
Over \$ 8,000 but not over \$ 10,000.....	\$ 1,820, plus 30% of excess over \$ 8,000
Over \$ 10,000 but not over \$ 12,000.....	\$ 2,420, plus 32% of excess over \$ 10,000
Over \$ 12,000 but not over \$ 14,000.....	\$ 3,060, plus 36% of excess over \$ 12,000
Over \$ 14,000 but not over \$ 16,000.....	\$ 3,780, plus 39% of excess over \$ 14,000
Over \$ 16,000 but not over \$ 18,000.....	\$ 4,560, plus 42% of excess over \$ 16,000
Over \$ 18,000 but not over \$ 20,000.....	\$ 5,400, plus 43% of excess over \$ 18,000
Over \$ 20,000 but not over \$ 22,000.....	\$ 6,260, plus 47% of excess over \$ 20,000
Over \$ 22,000 but not over \$ 24,000.....	\$ 7,200, plus 49% of excess over \$ 22,000

Rate Table for Head of Household Returns (contd.)

If your combined taxable income is:

	Your tax is:
Over \$ 24,000 but not over \$ 28,000	\$ 8,180, plus 52% of excess over \$ 24,000
Over \$ 28,000 but not over \$ 32,000	\$ 10,260, plus 54% of excess over \$ 28,000
Over \$ 32,000 but not over \$ 38,000	\$ 12,420, plus 58% of excess over \$ 32,000
Over \$ 38,000 but not over \$ 44,000	\$ 15,900, plus 62% of excess over \$ 38,000
Over \$ 44,000 but not over \$ 50,000	\$ 19,620, plus 66% of excess over \$ 44,000
Over \$ 50,000 but not over \$ 60,000	\$ 23,580, plus 68% of excess over \$ 50,000
Over \$ 60,000 but not over \$ 70,000	\$ 30,380, plus 71% of excess over \$ 60,000
Over \$ 70,000 but not over \$ 80,000	\$ 37,480, plus 74% of excess over \$ 70,000
Over \$ 80,000 but not over \$ 90,000	\$ 44,880, plus 76% of excess over \$ 80,000
Over \$ 90,000 but not over \$100,000	\$ 52,480, plus 80% of excess over \$ 90,000
Over \$100,000 but not over \$150,000	\$ 60,480, plus 83% of excess over \$100,000
Over \$150,000 but not over \$200,000	\$101,980, plus 87% of excess over \$150,000
Over \$200,000 but not over \$300,000	\$145,480, plus 90% of excess over \$200,000*
Over \$300,000	\$235,480, plus 91% of excess over \$300,000*

* The tax cannot in any event be more than 87% of taxable income.

Rate Table for Joint Returns

If your combined taxable income is:

	Your tax is:
Not over \$4,000	20% of taxable income
Over \$ 4,000 but not over \$ 8,000	\$ 800, plus 22% of excess over \$ 4,000
Over \$ 8,000 but not over \$ 12,000	\$ 1,680, plus 26% of excess over \$ 8,000
Over \$ 12,000 but not over \$ 16,000	\$ 2,720, plus 30% of excess over \$ 12,000
Over \$ 16,000 but not over \$ 20,000	\$ 3,920, plus 34% of excess over \$ 16,000
Over \$ 20,000 but not over \$ 24,000	\$ 5,280, plus 38% of excess over \$ 20,000
Over \$ 24,000 but not over \$ 28,000	\$ 6,800, plus 43% of excess over \$ 24,000
Over \$ 28,000 but not over \$ 32,000	\$ 8,520, plus 47% of excess over \$ 28,000
Over \$ 32,000 but not over \$ 36,000	\$ 10,400, plus 50% of excess over \$ 32,000
Over \$ 36,000 but not over \$ 40,000	\$ 12,400, plus 53% of excess over \$ 36,000
Over \$ 40,000 but not over \$ 44,000	\$ 14,520, plus 56% of excess over \$ 40,000
Over \$ 44,000 but not over \$ 52,000	\$ 16,760, plus 59% of excess over \$ 44,000
Over \$ 52,000 but not over \$ 64,000	\$ 21,480, plus 62% of excess over \$ 52,000
Over \$ 64,000 but not over \$ 76,000	\$ 28,920, plus 65% of excess over \$ 64,000
Over \$ 76,000 but not over \$ 88,000	\$ 36,720, plus 69% of excess over \$ 76,000
Over \$ 88,000 but not over \$100,000	\$ 45,000, plus 72% of excess over \$ 88,000
Over \$100,000 but not over \$120,000	\$ 53,640, plus 75% of excess over \$100,000
Over \$120,000 but not over \$140,000	\$ 68,640, plus 78% of excess over \$120,000
Over \$140,000 but not over \$160,000	\$ 84,240, plus 81% of excess over \$140,000
Over \$160,000 but not over \$180,000	\$100,440, plus 84% of excess over \$160,000
Over \$180,000 but not over \$200,000	\$117,240, plus 87% of excess over \$180,000
Over \$200,000 but not over \$300,000	\$134,640, plus 89% of excess over \$200,000*
Over \$300,000 but not over \$400,000	\$223,640, plus 90% of excess over \$300,000*
Over \$400,000	\$313,640, plus 91% of excess over \$400,000*

* The tax cannot in any event be more than 87% of combined taxable income.

SOCIAL SECURITY

The Social Security Act was passed in 1935 and subsequently amended in 1939, 1950, 1952 and 1954.

The act is administered by the Department of Health, Education and Welfare, of which the Social Security Administration is a part.

Old-Age, Survivors, and Disability Insurance

WHO IS COVERED?

Almost everyone who works fairly regularly. Self-employed doctors are the only large group not covered by this social security program.

To qualify for benefits or make payments possible for your survivors you must be in work covered by the law for a certain number of "quarters of coverage" after 1936 (for self-employment, after 1950). The number of quarters needed differs for different persons and depends on the date of your birth; in general, it is related to the length of time from 1936, from 1950, or from your twenty-first birthday and the time you reach retirement age. No one needs more than 40 quarters, and no one can qualify with less than 6. Your local social security office can tell you how long you need to work in covered employment under the present law.

WHO PAYS FOR THE INSURANCE?

Both workers and employers pay for the workers' insurance. Self-employed persons pay their own tax annually along with their income tax. Tax rates are scheduled to go up gradually until 1975:

Years	Workers and Employers Each to Pay	Self-employed' to Pay
1957-59.....	2¼%	3¾%
1960-64.....	2¾%	4¼%
1965-69.....	3¼%	4¾%
1970-74.....	3¾%	5¼%
1975 and after.....	4¾%	6¼%

HOW TO APPLY FOR BENEFITS

You apply for benefits by filing a claim either in person or by mail at your nearest social security office. You can get the address either from the post office or from the phone book under the listing, United States Government—Department of Health, Education and Welfare—Social Security Administration. You will need certain kinds of proof, depending upon the type of benefit you are claiming. If it is an old-age benefit, you should have proof of age. A wife claiming old-age benefits based on her husband's earnings should have both proof of age and a copy of the marriage certificate. In the case of survivors' benefits, you will need a copy of the death certificate of the deceased worker. If formal proof is not available, the social security office will tell you what kinds of information will be acceptable.

WHAT DOES SOCIAL SECURITY OFFER?

The social security tax you pay gives you three different kinds of protection: (1) retirement benefits, (2) survivors' benefits, and (3) disability benefits.

Retirement benefits. A man becomes eligible for an old-age benefit at age 65, if he has retired under the definition in the law. A woman worker also is eligible for a full old-age benefit at 65, but she may retire at 62 and get 80% of her full benefit for the rest of her life. The closer she is to age 65 when she starts collecting her benefit, the larger the fraction of her full benefit she will get.

The amount of the old-age benefit you are entitled to is the key to all other benefits under the program. The old-age benefit is based on average monthly earnings, generally those after 1950. (Amounts over \$4,200 a year are not counted.) The table on page 796 gives examples of benefits.

Using the table as a guide, you will see that average monthly earnings of \$300

would give you a benefit of \$98.50 a month when you retire at 65.

If your wife is also 65, then she will get a wife's benefit that is equal to half your benefit. So if your benefit is \$98.50 your wife gets \$49.30 (cents are rounded to the nearest dime).

If your wife is younger than you, but not under 62, she can draw a reduced benefit that depends on the number of months before she will be 65. If she draws her benefit when she is 62, she will get about ¾ of your basic benefit, or \$37. (She will get this amount for the rest of her life, unless you should die first; then she can start getting the full widow's benefit, described below.)

If your wife is entitled to a worker's old-age benefit on her own earnings she can draw whichever—the worker's or the wife's—is larger. No one can draw two benefits at the same time.

If you have children under 18 when you retire, they will get a benefit equal to half your benefit, and so will your wife, in that case, even if she is under 62. However, total benefits based on your earnings cannot be more than \$200 a month or 80% of your average monthly wage. When your children reach age 18, their benefits will stop, except a benefit that is going to a child who is permanently and totally disabled. Such a child can continue to get his benefit as long as his disability meets the definition in the law.

If you are a woman worker entitled to an old-age benefit and you have a dependent husband aged 65 or over, he may draw a benefit similar to a wife's benefit at 65.

Survivor benefits. This feature of the social security program gives you valuable life insurance protection—in some cases over \$30,000 worth. The amount of protection is again geared to what the worker would be entitled to at 65. If you can estimate from the table what your basic monthly benefit would be at 65, this is what your survivors would get:

1. A cash payment to cover your burial expenses. This comes to 3 times the basic monthly benefit but no more than \$255.

2. A benefit for each child until he reaches 18. If there is only one child eligible, he gets 75% of the basic benefit. If there are two or more children, each one gets 50% of the basic benefit and an additional 25% is split among them. (A disabled child can continue to collect benefits after age 18.)

3. A mother's benefit for your widow, if she has children under 18 in her care. Her benefit is 75% of the basic benefit. She can collect this until the youngest child reaches 18. Payments stop then (they

What Benefits You Get Under Social Security

Based on an average monthly wage of	Retirement benefits			Survivors' benefits		
	Worker's monthly benefit ¹	Worker with 62-year-old wife	Worker with 65-year-old wife	Widow and 1 child	Widow and 2 children	Widow age 62 ²
\$100.....	\$ 55.00	\$ 75.70	\$ 82.50	\$ 82.60	\$ 82.60	\$41.30
150.....	68.50	94.30	102.80	102.80	120.00	51.40
200.....	78.50	108.00	117.80	117.80	157.10	58.90
250.....	88.50	121.80	132.80	132.80	177.20	66.40
300.....	98.50	135.50	147.80	147.80	197.10	73.90
350.....	108.50	149.30	162.80	162.80	200.00	81.40

¹ Also indicates amount worker aged 50-64 would get if disabled. ² Also indicates amount that would be paid to only child or parent.

will start again when she is 62). If she has a disabled child in her care who is getting a benefit after 18, then her benefit continues, too.

Total family benefits cannot go over \$200 a month or 80% of your average monthly wage.

4. If there are no children under 18, your wife can get a widow's benefit starting at age 62. This would come to 75% of the basic benefit.

5. Dependent parents can sometimes collect survivors' benefits, if the deceased worker leaves no wife or child. They are usually eligible if: (a) they were getting at least half their support from the deceased worker when he died, (b) they have reached retirement age (65 for the father, 62 for the mother), and (c) they are not eligible for an old-age benefit based on their own earnings. Each parent would then get 75% of the basic benefit.

A woman worker can provide survivors' benefits for any of these dependents, if she has been contributing at least half their support: (1) her children under age 18, (2) her disabled child after 18, if the child is unmarried and was disabled before 18, and (3) her dependent widowed husband at age 65, if he hasn't remarried. Or, if she had no other dependents, her parents could collect benefits if they met the tests in paragraph (5) above.

Here is an example of survivors' benefits in one family situation: John Jones dies, leaving a wife and two children aged one and three. His average monthly wage was \$300. This would have given him an old-age benefit of \$98.50, if he had lived to 65. This is what his family gets: (1) a cash burial payment of \$255; (2) a total monthly benefit of \$123.20 for the two children; and (3) a \$73.90 monthly benefit for Mrs. Jones. Total benefits for the family come to \$197.10 a month while the two children are under 18. When the older child reaches 18 his benefits stop, but the younger child's benefit is raised

to \$73.90 a month. Mrs. Jones and the younger child then collect a total of \$147.80 a month for two years until the child reaches 18. Then all payments stop. When Mrs. Jones becomes 62 (assuming she hasn't remarried), she will again be paid \$73.90 a month.

Disability benefits. These are a new feature of the social security insurance system. Disability benefits are paid to two groups of people:

1. An insured worker with a total disability can collect his full old-age benefit at age 50, instead of waiting until 65. However, no benefits will be paid to his dependents until he reaches 65. To be eligible for disability benefits, a person must: (a) have worked in employment (or self-employment) covered by social security for about 5 out of the 10 years before he became disabled; (b) be suffering from a physical or mental disability of indefinite duration; and (c) be so disabled that he can't work, or at least "engage in any substantial gainful activity." If he meets those tests, his benefits will start after a 6-month waiting period.

The applicant is referred to the State vocational rehabilitation agency and, if rehabilitation services are proposed and the applicant refuses them without good cause, his disability benefit is suspended. If the worker gets workmen's compensation benefit or another federal benefit based on disability, his disability benefit is reduced by the amount of such benefit—except that a benefit paid by the Veterans Administration because of service-connected disability will not result in any reduction.

2. The permanently disabled child of a deceased or retired person who was covered by social security can collect benefits after age 18 (when children's benefits are ordinarily cut off). If the child is eligible, his mother can also get a benefit. The child must: (a) have been disabled before age 18 (but he need not have been drawing benefits before 18), (b) be unmarried,

and (c) have been dependent on the deceased or retired worker for at least half his support. The child's benefit would be 75% of the father's basic benefit and his mother would get the same amount. A disabled child can get a benefit based on his mother's earnings, instead of his father's, if she has contributed to at least half his support and has died or is drawing an old-age benefit.

The disabled child's benefit can actually be paid to adults, if the above tests are met. For example, an unmarried person, aged 40, who was born blind and is dependent on his father for support can collect a disabled child's benefit as soon as his father starts drawing an old-age benefit or dies.

YOU CAN EARN INCOME WITHOUT LOSING BENEFITS

If you are 72 or over, you can earn any amount. If you are under 72, you can earn \$1,200 a year without losing any benefits. (Only earned income is counted, not pensions, dividends, etc.) For each \$80 (or fraction of \$80) over \$1,200, you can lose one month's benefit. For example, \$1,290 could cancel two months' benefits, and \$2,081 could mean loss of the whole year's benefits. But you will not lose the benefit for any month in which you did not work as an employee for \$80 or more and did not perform substantial services in self-employment. For example, if you earned \$3,000 in 3 months and were idle the rest of the year, you would lose only 3 months' benefits.

When a man and wife are drawing old-age benefits based on his earnings, the wife will lose her benefit in any month that the husband loses his. But if a widow with young children loses her benefits by working, the children will continue to get theirs.

If you earn over \$1,200 a year while drawing benefits (and are under 72), you must report those earnings.

HOW TO PROTECT MY SOCIAL SECURITY ACCOUNT

1. *Always show your social security card when you start a new job.* In that way you will be sure that your earnings will be credited to your social security account and not someone else's. If you lose your social security card, apply for a new one. When a woman marries, she should apply for a new card showing her married name.

2. *Make a periodic check of earnings credited to your social security account.* You can do this by mailing postcard Form OAR-7004 to the Social Security Administration, Baltimore, Md. (You can get this

form at any social security office.) The reply will show total wages credited to your account since 1936 or when you started working. It's a good idea to check once every three years and prevent errors.

3. *If you should become permanently disabled, have your social security credits "frozen."* Social security benefits are usually based on your average earnings up to the date of death or retirement. A long period of sickness or disability could lower your average earnings and thus cut down or even eliminate the eventual benefit you or your family might get. But you can avoid this reduction in benefits by applying for a disability determination at your local social security office. Then the period of disability will not be counted.

PUBLIC ASSISTANCE

Aid to four groups of needy persons is provided under the Social Security Act through assistance programs administered by the states with grants from the Federal government. The Federal share of the individual payment, for the aged, the blind, and the disabled is 4/5 of the first \$30 of the average monthly payment plus half the balance, up to the \$60 maximum specified in the law. A blind person may earn up to \$50 a month and have such earnings disregarded when the state is determining whether he is needy. For aid to dependent children, the Federal government pays 14/17 of the first \$17 paid per person per month plus 1/2 the balance within the maximums (\$32 for one needy adult, \$32 for the first child, and \$23 for each additional child). To be eligible a child must be (1) under 18; (2) without parental support or care because of the death, absence from the home, or incapacity of a parent and (3) living with a parent or specified relative.

The law also permits federal sharing in the payments to doctors and others for medical care in behalf of needy persons—beyond what such persons get directly in their assistance payment.

Unemployment Insurance

Unemployment insurance is managed jointly by the states and the national government. Most states began paying benefits in 1938 and 1939.

UNDER WHAT CONDITIONS CAN THE WORKER COLLECT

The laws vary from state to state. In general, a waiting period of one week is required before collecting unemployment insurance; the worker must be able to work, must not have quit without good cause or have been discharged for misconduct; he must not be involved in a

State Unemployment Compensation Maximums as of Oct. 1, 1957

State	Weekly benefit	Duration (in weeks)	State	Weekly benefit	Duration (in weeks)
Alabama.....	\$28	20	Montana.....	\$32	22
Alaska.....	45*	26	Nebraska.....	32	20
Arizona.....	30	26	Nevada.....	37.50*	26
Arkansas.....	26	18	New Hampshire.....	32	26
California.....	40	26	New Jersey.....	35	26
Colorado.....	35	26	New Mexico.....	30	24
Connecticut.....	40*	26	New York.....	36	26
Delaware.....	35	26	North Carolina.....	32	26
D. C.....	30*	26	North Dakota.....	26*	20
Florida.....	30	16	Ohio.....	33*	26
Georgia.....	30	22	Oklahoma.....	28	26
Hawaii.....	35	20	Oregon.....	40	26
Idaho.....	40	26	Pennsylvania.....	35	30
Illinois.....	30*	26	Rhode Island.....	30	26
Indiana.....	33	20	South Carolina.....	26	22
Iowa.....	30	24	South Dakota.....	28	20
Kansas.....	34	20	Tennessee.....	30	22
Kentucky.....	32	26	Texas.....	28	24
Louisiana.....	25	20	Utah.....	37	26
Maine.....	33	26	Vermont.....	28	26
Maryland.....	35*	26	Virginia.....	28	18
Massachusetts.....	35*	26	Washington.....	35	26
Michigan.....	30*	26	West Virginia.....	30	24
Minnesota.....	38	26	Wisconsin.....	38	26½
Mississippi.....	30	20	Wyoming.....	41*	26
Missouri.....	33	26			

* This will be increased for unemployed persons with dependents.

labor dispute; above all, he must be willing to take a job in his field at prevailing wage rates. Other restrictions on payments involve leaving for marriage, pregnancy or further education.

The unemployed worker must go to the local state employment service office to register his claim for unemployment benefits and must register for work. If a suitable opening is available in his field, he must accept it or lose his unemployment payments. If a worker moves out of his own state, he can still collect at his new residence; the state where he is now located will act as agent for the other state, which pays his benefits.

WHO PAYS FOR THE INSURANCE?

The cost is borne by the employer in all but two states and Alaska. Each State (Alaska excepted) has a sliding scale of rates. The standard rate is set at 2.7% of taxable payroll in most states. But employers with records of steady employment (that is, few layoffs) are rewarded with rates lower than the standard 2.7%. The average rate for employers in 1956 was 1.3%. Tax is payable on only the first \$3,000 of a worker's pay, except in Delaware, Nevada, Oregon, and Rhode Island, where the limit is set at \$3,600, and in Alaska where the limit is \$4,200. Employees as well as employers pay a tax in

Alabama (0.1%), New Jersey (¼ of 1%), and Alaska (½ of 1%).

Employers pay an additional unemployment tax to the Federal Government—0.3% of the \$3,000 paid to each employee. This money is returned to the states in the form of federal grants for administrative expenses of the program; any amounts over these costs, up to \$200 million, is put in a special loan fund on which the states may draw when their payment funds are low, and the rest of the excess is assigned to the states to supplement the grants for administrative costs.

WHO IS COVERED AND WHO IS NOT?

Requirements vary from state to state, but all states cover firms having at least 4 employees for 20 weeks or more a year. In some states, firms with only one employee are covered. Certain classes of workers are specifically exempt under some or all state laws: farm workers, domestic workers, members of the employer's family, insurance agents on commission, workers in nonprofit organizations, student nurses, internes and casual labor.

Railroad Workers

These are covered by the Railroad Retirement Act, passed in 1935 and amended in 1937 and 1946. The social security provisions of this act are administered by the Railroad Retirement Board.

THE UNITED NATIONS



Its Major Cases and Actions

IRAN

Iran presented the first case before the Security Council on Jan. 19, 1946, demanding an end to Russian "interference" in Azerbaijan province, which Russia had brought under its control through a puppet government. Iran also demanded that Russia keep her promise to withdraw all occupation troops by Mar. 2. The Council kept the matter on the agenda. Russia withdrew her troops May 6.

GREECE

On Dec. 3, 1946, Greece complained to the Security Council that Communist-led rebels in northern Greece were being aided by Albania, Bulgaria and Yugoslavia. The Council named an investigating committee, which reported May 23, 1947, that those 3 nations were guilty. A Russian veto of July 29 prevented the Council's acceptance of the report. In Sept. 1948, the U. N. Balkan Commission, which continued to watch developments, again condemned the 3 nations for continuing aid to the Greek rebels. However, 3 months previously, on June 28, 1948, Marshal Tito's Yugoslavia had broken with Moscow. Thereafter, the Greek Communist-led rebellion faded out.

ATOMIC ENERGY CONTROL

On Dec. 31, 1946, a U. N. commission of 11 nations recommended the "Baruch plan" sponsored by the U. S. for international control and inspection. Only Russia dissented. In June 1947, she submitted a vastly different control plan, limiting international inspection so greatly that the secret making of atomic bombs could not be discovered. On May 17, 1948, the U. N. commission voted (9-2) to suspend work on international atomic control, blaming Russia for the deadlock. A Russian veto of June 22 prevented the Security Council from approving the majority-approved control plan. The topic then went to the General Assembly, which, on Nov. 4, 1948, adopted (40-6) the U. S.-sponsored plan; but nothing could be done to put it into effect because of Soviet-bloc opposition.

PALESTINE

A General Assembly special session met Apr. 28, 1947, at the request of Great Britain to consider Palestine. An 11-nation investigating committee recommended Aug. 31 that Britain give up control and that an Arab and a Jewish state be established. This partition plan was approved by the

Assembly in Nov. 1947, but proved impossible to enforce.

Britain ceased to govern Palestine on May 14, 1948. Israel proclaimed her independence and was attacked by 5 neighboring Arab nations. The U. N. made 6 appeals to both sides to stop the war; the last brought about a truce from June 11 to July 9. Intermittent fighting took place thereafter. Count Folke Bernadotte, the U. N. mediator, was murdered Sept. 17 near Jerusalem. He was succeeded by Dr. Ralph J. Bunche.

Israel signed an armistice with Egypt on Feb. 24, 1949, and with Jordan on Apr. 3. On May 11, the U. N. voted (37-12) to admit Israel as the 59th member.

INDONESIA

On July 30, 1947, Australia called the Security Council's attention to the fighting between the Netherlands and the Indonesian Republic. The Council, on Aug. 1, ordered both sides to cease hostilities. A Good Offices Commission was sent to Indonesia, and it effected a truce Jan. 17, 1948. In Dec. 1948, the Dutch attacked Jakarta, then the Indonesian capital, and the Council again issued a cease-fire order. Dutch troops were withdrawn from around Jakarta in July 1949. Indonesia thereafter peacefully achieved independence from the Netherlands.

ITALIAN COLONIES

On Sept. 15, 1948, after 3 years of argument, the Big 4 failed to agree on the disposition of the colonies which the peace treaty required Italy to give up. So, by a clause in the treaty, the question was referred to the General Assembly for settlement. The Assembly decided Nov. 21, 1949, that Libya should become independent on Jan. 1, 1952, and that Somaliland should be a U. N. trusteeship under Italian administration for 10 years, after which it would be independent. Eritrea was later federated with Ethiopia.

INDIA-PAKISTAN

On Jan. 2, 1948, India appealed to the U. N. to stop alleged aggression by Pakistan. Fighting had broken out over which nation should control the province of Kashmir. The Security Council sent a commission, which proposed that Kashmir's future be determined by a plebiscite. The Council agreed on Apr. 21, but both sides raised objections. Early in 1949, the U. N. commission succeeded in obtaining

a truce; and, on Mar. 14, 1950, the Council substituted a mediator, who was to seek demilitarization of the areas of Kashmir held by India and Pakistan and to try for a plebiscite. Two mediators failed.

RUSSIAN BOYCOTT

Soviet Delegate Malik walked out of the Security Council on Jan. 13, 1950, because it had refused (6-3) Russia's demand that Nationalist China be replaced in the U. N. by Communist China. The boycott ended on Aug. 1. Again the Council voted (8-3) to refuse membership to Communist China.

KOREA

Russia occupied the northern half of Korea after World War II, and the U. S. occupied the southern half below the 38th parallel. The understanding was that the occupying powers would set up an independent republic to govern the entire country. Russia refused to co-operate. The U. S. then referred the problem to the U. N., and the General Assembly voted Nov. 5, 1947, to send a commission to Korea to set up a free government. Russia, however, boycotted the commission and refused to allow it to enter North Korea. The commission therefore supervised free elections in South Korea and assisted in setting up the Republic of Korea with its capital at Seoul.

HUNGARY

Sparked by student demonstrations, street riots in Hungary in Oct. 1956, took on the proportions of rebellion. The Communist government called for Soviet help, and Russian tanks rolled into Budapest on Oct. 24. The Communists sought to appease the rebellious people by putting in as Premier a man, Imre Nagy, who had been ousted from the party as a "Titoist."

Nagy promised to throw off Russian shackles, and by Nov. 1, Russian tanks and troops had withdrawn from Budapest. On Nov. 4, however, the Russian tanks returned in force, shooting freely and killing civilians. The Russians set up a new puppet government headed by János Kadar.

The General Assembly on Nov. 4, in a special session, called on Russia to get its troops out of Hungary "without delay."

In the ensuing 6 weeks, the General Assembly passed 4 more resolutions about the Soviet crushing of Hungary.

One of the resolutions (Dec. 12, 1956) was an outright condemnation of Russia for "violation of the Charter by the

U.S.S.R. in depriving Hungary of its liberty and independence." The vote was 55 to 8, which constituted a world-wide indictment.

The General Assembly decided in January 1957 to name a five-man committee to investigate from outside Hungary. On it were representatives of Denmark, Tunisia, Uruguay, Ceylon and Australia.

The committee heard testimony from 111 Hungarians, mainly refugees, in Europe and America. It reported unanimously on June 20, 1957, that the Hungarian uprising had been a spontaneous revolt of the people and that the crushing of the revolt by Soviet Russian troops had cost between 2,500 and 3,000 lives.

Meanwhile, people had begun fleeing from Communist Hungary on a mass scale almost unprecedented. By the end of April 1957, some 175,000 Hungarians had sought asylum in Austria and about 20,000 others in Yugoslavia.

Within a few months the U. N. alone collected more than \$7 million. 39 countries opened their doors to more than 120,000 of the Hungarian refugees.

SUEZ

On Oct. 29, 1956, Israeli armed forces launched a major attack into the Gaza Strip and into Egypt's Sinai Desert territory.

An emergency special session of the U. N. General Assembly adopted on the night of Nov. 1-2, by a vote of 64 in favor, 5 against, 6 abstentions, a United States resolution calling upon all parties involved in hostilities in the area to agree to an immediate cease-fire. By that time, Britain and France were involved in the fighting.

Heeding the General Assembly call, Britain and France announced on Nov. 3 that they would stop military action.

By direction of the General Assembly, a United Nations Emergency Force was established to keep the peace. The first units landed at Ismailia, midway point on the Suez Canal, on Nov. 11, 1956.

On Feb. 21, Israel agreed to pull out its last troops if the U. N. Emergency Force stationed peace-keeping troops on the Aqaba Gulf and in the Gaza Strip. The U. N. Emergency Force troops were so stationed, and they became the first uniformed peace-preserving unit in the history of the U. N.

The nations which contributed troops were Brazil, Canada, Colombia, Denmark, Finland, India, Norway, Sweden and Yugoslavia.

The 82 Members of the United Nations, 1957

Country	Signed U. N. Decla- ration ¹	Joined U. N. Organi- zation ²	League of Nations ³	Country	Signed U. N. Decla- ration ¹	Joined U. N. Organi- zation ²	League of Nations ³
Afghanistan.....	.....	1946	1934-46	Italy.....	.....	1955	1920-39
Albania.....	.....	1955	1920-46	Japan.....	.....	1956	1920-35
Argentina.....	.....	1945	1920-46	Jordan.....	.....	1955	.....
Australia.....	1942	1945	1920-46	Laos.....	.....	1955	.....
Austria.....	.....	1955	1920-40	Lebanon.....	1945	1945	.....
Belgium.....	1942	1945	1920-46	Liberia.....	1944	1945	1920-46
Bolivia.....	1943	1945	1920-46	Libya.....	.....	1955	.....
Brazil.....	1943	1945	1920-28	Luxemburg.....	1942	1945	1920-46
Bulgaria.....	.....	1955	1920-46	Malaya, Federation of.....	.....	1957	.....
Burma.....	.....	1948	.....	Mexico.....	1942	1945	1931-46
Byelorussian S.S.R. ⁴.....	.....	1945	.....	Morocco.....	.....	1956	.....
Cambodia.....	.....	1955	.....	Nepal.....	.....	1955	.....
Canada.....	1942	1945	1920-46	Netherlands.....	1942	1945	1920-46
Ceylon.....	.....	1955	.....	New Zealand.....	1942	1945	1920-46
Chile.....	1945	1945	1920-40	Nicaragua.....	1942	1945	1920-38
China.....	1942	1945	1920-46	Norway.....	1942	1945	1920-46
Colombia.....	1943	1945	1920-46	Pakistan.....	.....	1947	.....
Costa Rica.....	1942	1945	1920-26	Panama.....	1942	1945	1920-46
Cuba.....	1942	1945	1920-46	Paraguay.....	1945	1945	1920-37
Czechoslovakia.....	1942	1945	1920-46	Peru.....	1945	1945	1920-41
Denmark ⁵.....	.....	1945	1920-46	Philippines.....	1942	1945	.....
Dominican Republic.....	1942	1945	1924-46	Poland ⁶	1942	1945	1920-46
Ecuador.....	1945	1945	1934-46	Portugal.....	.....	1955	1920-46
Egypt.....	1945	1945	1937-46	Romania.....	.....	1955	1920-42
El Salvador.....	1942	1945	1920-39	Saudi Arabia.....	1945	1945	.....
Ethiopia.....	1942	1945	1923-46	South Africa, U. of.....	1942	1945	1920-46
Finland.....	.....	1955	1920-46	Spain.....	.....	1955	1920-41
France.....	1944	1945	1920-46	Sudan.....	.....	1956	.....
Ghana.....	.....	1957	.....	Sweden.....	.....	1946	1920-46
Greece.....	1942	1945	1920-46	Syria.....	1945	1945	.....
Guatemala.....	1942	1945	1920-38	Thailand (formerly Siam).....	.....	1946	1920-46
Haiti.....	1942	1945	1920-44	Tunisia.....	.....	1956	.....
Honduras.....	1942	1945	1920-38	Turkey.....	1945	1945	1932-46
Hungary.....	.....	1955	1922-41	Ukrainian S.S.R. ⁴.....	.....	1945	.....
Iceland.....	.....	1946	.....	U.S.S.R.....	1942	1945	1934-39
India.....	1942	1945	1920-46	United Kingdom.....	1942	1945	1920-46
Indonesia.....	.....	1950	.....	United States.....	1942	1945	.....
Iran.....	1943	1945	1920-46	Uruguay.....	1945	1945	1920-46
Iraq.....	1943	1945	1932-46	Venezuela.....	1945	1945	1920-40
Ireland.....	.....	1955	1923-46	Yemen.....	.....	1947	.....
Israel.....	.....	1949	.....	Yugoslavia.....	1942	1945	1920-46

¹ Declaration of United Nations was originally signed by 26 nations in Washington, D. C., on Jan. 1, 1942. ² U. N. officially came into existence Oct. 24, 1945. ³ League was formally dissolved Apr. 18, 1946. Nations withdrawing before that time did so voluntarily, except U.S.S.R., which was expelled. Other members of League were: Estonia (1921-46), Germany (1926-35), Latvia (1921-46), Lithuania (1921-46), Switzerland (1920-46). ⁴ Admission as separate nation approved at San Francisco Conference. ⁵ Invited to attend San Francisco Conference June 5, 1945, after its liberation. ⁶ Not represented at San Francisco Conference, but subsequently signed Charter as original member.

United Nations Headquarters

The first regular session of the General Assembly held at Central Hall, Westminster, London, voted that Interim Headquarters of the Organization should be located in New York. In August 1946, an Interim Headquarters was set up at Lake Success on Long Island, in a part of the Sperry Gyroscope Co.'s plant. The New York City building at Flushing Meadow, site of the 1939 World's Fair, was converted for the use of the General Assembly. The search for a permanent home ended in December 1946, when the General Assembly accepted an offer from John

D. Rockefeller, Jr., of \$8,500,000 for the purchase of the present Headquarters site—an 18-acre tract alongside Manhattan's East River. The U. S. Government loaned the U. N. \$65,000,000 interest free, which is being repaid in annual installments.

Architectural plans drawn up by an international Board of Design were approved by the Assembly, and construction began in September 1948. By mid-1950, the 39-story Secretariat Building was ready for occupancy, and in the spring of 1951 "United Nations, New York" became the Organization's permanent address.

Principal Organs of the United Nations

(For functions, see Charter, pp. 307-19. For officers of Secretariat and member nations of councils, see pp. 804-05.)

SECRETARIAT

Secretary-General

Dag Hammarskjöld, of Sweden, Apr. 10, 1953, to the present.

Former Secretary-General

Trygve Lie, of Norway, Feb. 1, 1946, to Apr. 10, 1953.

GENERAL ASSEMBLY

The General Assembly is composed of all member states. It does most of its work in committees, of which there are 4 types: main, procedural, standing and ad hoc.

Main Committees

First Committee (Political and Security, including the regulation of armaments).
Special Political Committee.

Second Committee (Economic and Financial).

Third Committee (Social, Humanitarian and Cultural).

Fourth Committee (Trusteeship, including Non-Self-Governing Territories).

Fifth Committee (Administrative and Budgetary).

Sixth Committee (Legal).

Presidents of the General Assembly

Paul-Henri Spaak, of Belgium, 1946, First Session.

Oswaldo Aranha, of Brazil, 1947, First Special Session and Second Regular Session.

Dr. José Arce, of Argentina, 1948, Second Special Session.

Herbert V. Evatt, of Australia, 1948, Third Session.

Carlos P. Romulo, of the Philippines, 1949, Fourth Session.

Nasrollah Entezam, of Iran, 1950, Fifth Session.

Luis Padilla Nervo, of Mexico, 1951, Sixth Session.

Lester B. Pearson, of Canada, 1952, Seventh Session.

Mrs. Vijaya Lakshmi Pandit, of India, 1953, Eighth Session.

Elco N. van Kleffens, of the Netherlands, 1954, Ninth Session.

José Maza, of Chile, 1955, Tenth Session.

Prince Wan Waihayakon, of Thailand, 1956-57, Eleventh Session.

Sir Leslie Munro, of New Zealand, 1957-58, Twelfth Session.

SECURITY COUNCIL

The Security Council is composed of 5 permanent members—China, France, the U.S.S.R., the United Kingdom and the U. S. There are 6 nonpermanent members serving 2-year terms.

The Military Staff Committee is composed of the Chiefs of Staff of the 5 permanent members or their representatives; the Disarmament Commission, established by the General Assembly under the Security Council, has the same membership as the Council, plus Canada when not a member of the Council.

ECONOMIC AND SOCIAL COUNCIL

The Economic and Social Council is composed of 18 nonpermanent members serving 3-year terms.

Functional Commissions

Transport and Communications Commission.

Statistical Commission.

Population Commission.

Social Commission.

Commission on Human Rights.

Commission on the Status of Women.

Commission on Narcotic Drugs.

Commission on International Commodity Trade.

Regional Economic Commissions

Economic Commission for Europe.

Economic Commission for Asia and the Far East.

Economic Commission for Latin America.

TRUSTEESHIP COUNCIL

The Trusteeship Council is composed of 14 members—seven members—Australia, Belgium, France, Italy, New Zealand, the United Kingdom and the U. S., which administer trust territories; China and the U.S.S.R., other permanent members of the Security Council which do not administer trust territories, and 5 other members elected by the General Assembly serving 3-year terms. This arrangement ensures that the total number of Council members is equally divided between those U. N. members which administer trust territories and those which do not.

The Trusteeship Agreements concern the following territories (the Administering Authority in each case is in *italics*):

Nauru—*Australia* (on behalf of *Australia*, *New Zealand* and the *United Kingdom*).

New Guinea—*Australia*.

Ruanda-Urundi—*Belgium*.

Cameroons } *France*.

Togoland } *France*.

Somaland—*Italy*.

Western Samoa—*New Zealand*.

Cameroons } *United Kingdom*.

Tanganyika } *United Kingdom*.

The Territory of the Pacific Islands—composed of the former Japanese-mandated islands of the Marshalls, Marianas (with the exception of Guam) and Carolines—is a strategic Trust Territory administered by the U. S.

The General Assembly decided at its Fourth Session in 1949 that former Italian Somaliland was to be placed under the Trusteeship System for 10 years, at the end of which time (that is, in 1960) it would become independent. Italy became the Administering Authority on Apr. 1, 1950.

Specialized Agencies

International Labour Organisation (ILO)

Established: Apr. 11, 1919, when constitution was adopted as Part XIII of Treaty of Versailles.

Purposes: To contribute to establishment of lasting peace by promoting social justice; to improve, through international action, labor conditions and living standards; to promote economic and social stability.

Headquarters: Geneva, Switzerland.

Food and Agriculture Organization of the United Nations (FAO)

Established: Oct. 16, 1945, when constitution became effective.

Purposes: To raise nutrition levels and living standards; to secure improvements in production and distribution of food and agricultural products.

Headquarters: Viale delle Terme Di Caracalla, Rome, Italy.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

Established: Nov. 4, 1946, when 20th signatory to constitution deposited instrument of acceptance with government of United Kingdom.

Purposes: To promote collaboration among nations through education, science and culture in order to further justice, rule of law and human rights and freedoms without distinction of race, sex, language or religion.

Headquarters: 19 Ave. Kléber, Paris 16, France.

World Health Organization (WHO)

Established: Apr. 7, 1948, when 26 members of the United Nations had accepted its constitution adopted July 22, 1946, by International Health Conference in New York City.

Purposes: To aid attainment by all peoples of the world of highest possible level of health.

Headquarters: Palais des Nations, Geneva, Switzerland.

International Bank for Reconstruction and Development (Bank)

Established: Dec. 27, 1945, when Articles of Agreement drawn up at Bretton Woods Conference in July, 1944, came into force. Began operations June 25, 1946.

Purposes: To assist in reconstruction and development of economies of members by making loans directly and promoting private foreign investment; to promote balanced growth of international trade.

Headquarters: 1818 H St., NW, Washington 25, D. C.

International Finance Corporation (IFC)

(Affiliate of International Bank)

Established: Charter of IFC came into force on July 20, 1956. Although IFC is affiliated with the International Bank, it is a separate legal entity and its funds are entirely separate from those of the Bank. However, membership in the Corporation is open only to Bank members.

Purposes: Its objective is to further economic development by encouraging the growth of productive private enterprise in its member countries, particularly in the less developed areas. It is empowered to invest in productive private enterprises in association with private investors, and without government guarantee of repayment in cases where sufficient private capital is not available on reasonable terms; and to serve as a clearing house to bring together investment opportunities, private capital, both foreign and domestic, and experienced management.

Headquarters: 1818 H St., NW, Washington, D. C.

International Monetary Fund (Fund)

Established: Dec. 27, 1945, when Articles of Agreement drawn up at Bretton Woods Conference in July 1944 came into force. Fund began operations on March 1, 1947.

Purposes: To promote international monetary co-operation and expansion of international trade; to promote exchange stability; to assist in establishment of multilateral system of payments in respect of current transactions between members.

Headquarters: 1818 H St., NW, Washington 25, D. C.

International Trade Organization (ITO) (General Agreement on Tariffs and Trade (GATT))

Established: Although establishment of ITO and the bringing into operation of the Havana Charter, on which it was to be based, have not taken place, one of the main objectives of that Charter has

been embodied in an international commercial treaty, known as the General Agreement on Tariffs and Trade (GATT). Provision has been made for a permanent Organization for Trade Cooperation (OTC) to administer GATT and to come into being when it has been accepted by countries which account for a high proportion of world trade.

Inter-Governmental Maritime Consultative Organization (IMCO)

Established: Will come into existence when 21 nations, of which 7 must each have a total tonnage of at least one million gross tons of shipping, have become parties to convention drawn up by U. N. Maritime Conference at Geneva, Feb. 19 to Mar. 6, 1948. (Preparatory Committee established by Conference will cease to exist after IMCO comes into being.)

Purposes: To promote co-operation among governments in technical problems of international shipping and to encourage removal of discriminatory action by governments and of unfair restrictive practices by shipping concerns.

Headquarters: To be in London.

International Atomic Energy Agency (IAEA)

Established: Statute for IAEA, approved on October 26, 1956 at a conference held at U. N. Headquarters, New York, came into force on July 29, 1957. The Agency's working relationship with the United Nations, however, is to be determined at the first General Conference of IAEA, scheduled for October 1, 1957 at Vienna.

Purposes: To promote the peaceful uses of atomic energy, and to ensure that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.

Headquarters: To be in Vienna, Austria.

Other Agencies are: Int'l Civil Aviation Org., Universal Postal Union, Int'l Telecommunication Union and World Meteorological Org.

United Nations Costs

U. N. budget appropriations for 1957 were \$50,815,700. Member states contribute on a scale determined by the General Assembly. In 1957, the U. S. paid $\frac{1}{3}$ of the cost, the U.S.S.R.* paid 13.96% and the U. K. paid 7.81%.

Judges of the International Court of Justice

(Judges serve for a 9-year term and may be re-elected. Expiration dates of terms are shown in parentheses. All terms expire February 5 of the year designated. The seat of the Court is The Hague, Netherlands.)

President: Green H. Hackworth, U. S. (1961)

Vice President: Abdel Hamid Badawi, Egypt (1967)

E. C. Armand-Ugon, Uruguay (1961)

Jules Basdevant, France (1964)

Roberto Córdova, Mexico (1964)

José Gustavo Guerrero, El Salvador (1964)

Mohammad Zafrulla Khan, Pakistan (1961)

Helge Klaestad, Norway (1961)

F. I. Kojevnikov, U.S.S.R. (1961)

Hersch Lauterpacht, U. K. (1964)

L. M. Moreno Quintana, Argentina (1964)

Sir Percy Spender, Australia (1967)

Bohdan Winiarski, Poland (1967)

Jean Spiropoulos, Greece (1967)

V. K. Wellington Koo, China (1967)

Officers of the Secretariat

Andrew W. Cordier, Executive Assistant to the Secretary-General.

Constantin Stavropoulos, Legal Counsel.

Bruce R. Turner, Controller.

J. A. C. Robertson, Director of Personnel.

Ralph J. Bunche, Undersecretary.*

A. Dobrynin, Undersecretary.*

Dragoslav Protitch, Undersecretary, Dept.

of Political and Security Council Affairs.

Philippe de Seynes, Undersecretary, Dept.

of Economic and Social Affairs.

Martin Hill, Deputy Undersecretary, Dept.

of Economic and Social Affairs.

Benjamin Cohen, Undersecretary, Dept. of

Trusteeship and Information from Non-

Self-Governing Territories.

* Duties not confined to a single department.

Ahmed S. Bokhari, Undersecretary, Dept. of Public Information.

Alfred G. Katzin, Deputy Undersecretary, Dept. of Public Information.

Victor Hoo, Undersecretary, Dept. of Conference Services.

David V. Vaughan, Director, Office of General Services.

Hugh L. Keenleyside, Director General, Technical Assistance Administration.

Gustavo Martínez Cabañas, Deputy Director General, Technical Assistance Administration.

Maurice Pate, Executive Director, U. N. Children's Fund (UNICEF).

David Owen, Executive Chairman, Technical Assistance Board.

Security Council

Representatives (as of Sept. 1957)*

Australia: E. Ronald Walker.
 China: Tingfu F. Tsiang.
 Colombia: Alfonso Araujo.
 Cuba: Emilio Nuñez-Portuondo.
 France: Guillaume Georges-Picot.
 Iraq: Moussa Al-Shabandar.
 Philippines: General Carlos P. Romulo.
 Sweden: Gunnar V. Jarring.
 U.S.S.R.: Arkady A. Sobolev.
 United Kingdom: Sir Pierson Dixon.
 United States: Henry Cabot Lodge, Jr.

* In Oct. 1957, Japan, Panamá and Canada were elected for terms beginning Jan. 1, 1958. They replace Philippines, Cuba and Australia.

Economic and Social Council

Representatives (24th session, July-August 1957)*

Argentina: Mariano José Drago.
 Brazil: Henrique de Souza Gomes.
 Canada: R. A. Mackay.
 China: Cheng Paonan.
 Dominican Republic: Salvador Ortiz.
 Egypt: El Attafi Sinbel.
 Finland: Mrs. Tyyne Leivo-Larsson.
 France: Pierre Abelin.
 Greece: Georges Bensis.

Elected Member States Serving Terms on U. N. Councils

Security Council

Jan. 1946-Dec. 1946: Egypt; Mexico; Netherlands.
 Jan. 1946-Dec. 1947: Australia; Brazil; Poland.
 Jan. 1947-Dec. 1948: Belgium; Colombia; Syria.
 Jan. 1948-Dec. 1949: Argentina; Canada; Ukrainian S.S.R.
 Jan. 1949-Dec. 1950: Cuba; Egypt; Norway.
 Jan. 1950-Dec. 1951: Ecuador; India; Yugoslavia.
 Jan. 1951-Dec. 1952: Brazil; Netherlands; Turkey.
 Jan. 1952-Dec. 1953: Chile; Greece; Pakistan.
 Jan. 1953-Dec. 1954: Colombia; Denmark; Lebanon.
 Jan. 1954-Dec. 1955: Brazil; New Zealand; Turkey.
 Jan. 1955-Dec. 1956: Belgium, Iran, Peru.
 Jan. 1956-Dec. 1957: Australia; Cuba; Yugoslavia. Yugoslavia resigned at the end of 1956 and was replaced by the Philippines.
 Jan. 1957-Dec. 1958: Colombia; Iraq; Sweden.
 Jan. 1958-Dec. 1959: Canada, Japan, Panama.

Economic and Social Council

Jan. 1946-Dec. 1946: Colombia; Greece; Lebanon; Ukrainian S.S.R.; U. S.; Yugoslavia.
 Jan. 1946-Dec. 1947: Cuba; Czechoslovakia; India; Norway; United Kingdom; U.S.S.R.
 Jan. 1946-Dec. 1948: Belgium (resigned 1947 and replaced by Netherlands); Canada; Chile; China; France; Peru.
 Jan. 1947-Dec. 1949: Byelorussian S.S.R.; Lebanon; New Zealand; Turkey; U. S.; Venezuela.
 Jan. 1948-Dec. 1950: Australia; Brazil; Denmark; Poland; United Kingdom; U.S.S.R.

Indonesia: Ismael Thajeb.
 Mexico: Daniel Cosío Villegas.
 Netherlands: J. M. A. H. Luns.
 Pakistan: Mohammad Mir Khan.
 Poland: Jerzy Michalowski.
 U.S.S.R.: A. V. Zakharov.
 United Kingdom: W. D. Ormsby Gore.
 United States: Neil Jacoby.
 Yugoslavia: Joza Brilej.

* In Oct. 1957, France, Netherlands and China were re-elected for terms beginning Jan. 1, 1958. In addition, Chile, Costa Rica and Sudan were elected to replace Argentina, Dominican Republic and Egypt.

Trusteeship Council

Representatives (20th session, May-July 1957)

Australia: John Douglas Lloyd Hood.
 Belgium: Alfred Claeys Bouuaert.
 Burma: U Than Hla.
 China: Chiping H. C. Kiang.
 France: Robert Barges.
 Guatemala: Emilio Arenales Catalan.
 Haiti: Max H. Dorsinville.
 India: V. K. Krishna Menon.
 Italy: Remigio Danilo Grillo.
 New Zealand: Sir Leslie Munro.
 Syria: Rafik Asha.
 U.S.S.R.: Ivan I. Lobanov.
 United Kingdom: Sir Andrew Cohen.
 United States: Mason Sears.

Jan. 1949-Dec. 1951: Belgium; Chile; China; France; India; Peru.
 Jan. 1950-Dec. 1952: Canada; Czechoslovakia; Iran; Mexico; Pakistan; U. S.
 Jan. 1951-Dec. 1953: Philippines; Poland; Sweden; United Kingdom; Uruguay; U.S.S.R.
 Jan. 1952-Dec. 1954: Argentina; Belgium; China; Cuba; Egypt; France.
 Jan. 1953-Dec. 1955: Australia; India; Turkey; U. S.; Venezuela; Yugoslavia.
 Jan. 1954-Dec. 1956: Czechoslovakia; Ecuador; Norway; Pakistan; United Kingdom; U.S.S.R.
 Jan. 1955-Dec. 1957: Argentina; China; Dominican Republic; Egypt; France; Netherlands.
 Jan. 1956-Dec. 1958: Brazil; Canada; Greece; Indonesia; U. S.; Yugoslavia.
 Jan. 1957-Dec. 1959: Finland; Mexico; Pakistan; Poland; U.S.S.R.; United Kingdom.
 Jan. 1958-Dec. 1960: Chile, China, Costa Rica, France, Netherlands, Sudan.

Trusteeship Council

Jan. 1947-Dec. 1949: Iraq; Mexico.
 Jan. 1948-Dec. 1950: Costa Rica (resigned Sept. 1949 and replaced by Dominican Republic); Philippines.
 Jan. 1950-Dec. 1952: Argentina (resigned with effect of Jan. 1, 1952 and replaced by El Salvador); Iraq.
 Jan. 1951-Dec. 1953: Dominican Republic; Thailand.
 Jan. 1953-Dec. 1955: El Salvador; Syria.
 Jan. 1954-Dec. 1956: Haiti; India.
 Jan. 1956-Dec. 1958: Burma; Guatemala; Syria.
 Jan. 1957-Dec. 1959: Haiti, India.

Delegation Heads to the United Nations

Members Represented at Headquarters*

Afghanistan: Abdul Hamid Aziz.
 Albania: Reis Malile.
 Argentina: Mariano José Drago.
 Australia: Dr. E. Ronald Walker.
 Austria: Dr. Franz Matsch.
 Belgium: Joseph Nisot.
 Bolivia: Dr. German Quiroga-Galdo.
 Brazil: Cyro de Freitas-Valle.
 Bulgaria: Dr. Peter G. Voutov.
 Burma: U Thant.
 Cambodia: M. Nong Kimny.
 Canada: Dr. R. A. Mackay.
 Ceylon: R. S. S. Gunewardene.
 Chile: José Serrano.
 China: Dr. Tingfu F. Tsiang.
 Colombia: Alfonso Araujo.
 Costa Rica: Dr. Alberto F. Cañas.
 Cuba: Dr. Emilio Nuñez-Portuondo.
 Czechoslovakia: Josef Ullrich.
 Denmark: Karl I. Eskelund.
 Dominican Rep.: Dr. Enrique de Marchena.
 Ecuador: Dr. Jose Vincente Trujillo.
 Egypt: Omar Loutfi.
 El Salvador: Dr. Migual Rafael Urquía.
 Ethiopia: Ato Haddis Alemayehou.
 Finland: George de Gripenberg.
 France: Guillaume Georges-Picot.
 Greece: Christian X. Palamas.
 Guatemala: Emilio Arenales Catalan.
 Haiti: Emile Saint Lot.
 Honduras: Marco Antonio Batres.
 Hungary: Peter Mod.
 Iceland: Thor Thors.
 India: Arthur S. Lall.
 Indonesia: Ali Sastroamidjojo.
 Iran: Dr. Djalal Abdoh.
 Iraq: Hashim Jawad.
 Ireland: Frederick H. Boland.
 Israel: Abba Eban.

Italy: Dr. Leonardo Vitetti.
 Japan: Koto Matsudaira.
 Jordan: Yusuf Haikal.
 Laos: Ourot R. Souvannavong.
 Lebanon: Edward Rizk.
 Liberia: Charles T. O. King.
 Mexico: Rafael de la Colina.
 Nepal: Rishikesh Shah.
 Netherlands: C. W. A. Schurmann.
 New Zealand: Sir Leslie Munro.
 Nicaragua: Dr. Guillermo Sevilla-Sacasa.
 Norway: Hans Engen.
 Pakistan: G. Ahmed.
 Panama: Jorge E. Illueca (Acting Permanent Representative).
 Paraguay: Dr. Pacifico Montero de Vargas.
 Peru: Carlos Mackehenle.
 Philippines: Felixberto M. Serrano.
 Poland: Jerzy Michalowski.
 Portugal: Dr. Vasco Vieira Garin.
 Romania: Mihal Magheru.
 Saudi Arabia: Sheikh Abdullah Al-Khayyal.
 Spain: Don Jose Felix de Lequerica.
 Sudan: Yacoub Osman.
 Sweden: Gunnar V. Jarring.
 Syria: Rafik Asha.
 Thailand: Prince Wan Waithayakon.
 Tunisia: Mongi Slim.
 Turkey: Seyfullah Esin (Acting Permanent Representative).
 Union of S. Af.: J. S. F. Botha.
 U.S.S.R.: Arkady A. Sobolev.
 United Kingdom: Sir Pierson Dixon.
 United States: Henry Cabot Lodge, Jr.
 Uruguay: Prof. Enrique Rodriguez Fabregat.
 Venezuela: Dr. Santiago Perez-Perez.
 Yemen: Mohamed Kamil Abdul Rahin.
 Yugoslavia: Dr. Joza Brilej.

* Permanent representatives to U. N. as of Sept. 1957. Not all nations maintain permanent missions.

U. S. Permanent Mission to U. N.

Henry Cabot Lodge, Jr.; Ambassador Extraordinary and Plenipotentiary, Permanent Representative to U. N.
 James J. Wadsworth; Ambassador Extraordinary and Plenipotentiary, Deputy Representative to U. N.
 James F. Barco; Minister, Deputy Representative on Security Council, Counsellor of Mission.
 Mason Sears; Representative on Trusteeship Council.
 Nell H. Jacoby; Representative on Economic and Social Council.
 Albert S. Watson; Executive Director.
 Albert F. Bender, Jr.; Adviser, Legal and International Organization Affairs.

U. S. Delegation to the 12th Session of the General Assembly (starting September 17, 1957)

Representatives

Henry Cabot Lodge, Jr. George Meany
 Walter H. Judd Herman Wells
 A. S. J. Carnahan

Alternate Representatives

James J. Wadsworth Genoa S. Washington
 Mrs. Oswald B. Lord Miss Irene Dunne
 Philip M. Klutznick

The Secretary of State, John Foster Dulles, will serve as Chairman of the U. S. Delegation, *ex officio*, during his presence at the session.

The U. N. Flag

The United Nations has its own flag, which is light blue. In the center is the U. N. symbol, a polar map of the world

embraced by olive branches, in white. The General Assembly adopted the flag on October 20, 1947.

CHARTER OF THE UNITED NATIONS

WHE the peoples of the United Nations determined to save succeeding generations from the scourge of war, which twice in our lifetime has brought untold sorrow to mankind, and

To reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small, and

To establish conditions under which justice and respect for the obligations arising from treaties and other sources of international law can be maintained, and

To promote social progress and better standards of life in larger freedom, and for these ends

To practice tolerance and live together in peace with one another as good neighbors, and

To unite our strength to maintain international peace and security, and

To insure, by the acceptance of principles and the institution of methods, that armed force shall not be used, save in the common interest, and

To employ international machinery for the promotion of the economic and social advancement of all peoples, have resolved to combine our efforts to accomplish these aims.

Accordingly, our respective Governments, through representatives assembled in the city of San Francisco, who have exhibited their full powers found to be in good and due form, have agreed to the present Charter of the United Nations and do hereby establish an international organization to be known as the United Nations.

CHAPTER I

Purposes and Principles

Article 1

The purposes of the United Nations are:

1. To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;

2. To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;

3. To achieve international cooperation in solving international problems of an economic, social, cultural, or humanitarian

character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and

4. To be a center for harmonizing the actions of nations in the attainment of these common ends.

Article 2

The Organization and its Members, in pursuit of the Purposes stated in Article 1, shall act in accordance with the following Principles:

1. The Organization is based on the principle of the sovereign equality of all its Members.

2. All Members, in order to ensure to all of them the rights and benefits resulting from membership, shall fulfill in good faith the obligations assumed by them in accordance with the present Charter.

3. All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.

4. All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.

5. All Members shall give the United Nations every assistance in any action it takes in accordance with the present Charter, and shall refrain from giving assistance to any state against which the United Nations is taking preventive or enforcement action.

6. The Organization shall ensure that states which are not Members of the United Nations act in accordance with these Principles so far as may be necessary for the maintenance of international peace and security.

7. Nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require the Members to submit such matters to settlement under the present Charter; but this principle shall not prejudice the application of enforcement measures under Chapter VII.

CHAPTER II

Membership

Article 3

The original Members of the United Nations shall be the states which, having participated in the United Nations Conference on International Organization at San Francisco, or having previously signed

the Declaration by United Nations of January 1, 1942, sign the present Charter and ratify it in accordance with Article 110.

Article 4

1. Membership in the United Nations is open to all other peace-loving states which accept the obligations contained in the present Charter and, in the judgment of the Organization, are able and willing to carry out these obligations.

2. The admission of any such state to membership in the United Nations will be effected by a decision of the General Assembly upon the recommendation of the Security Council.

Article 5

A Member of the United Nations against which preventive or enforcement action has been taken by the Security Council may be suspended from the exercise of the rights and privileges of membership by the General Assembly upon the recommendation of the Security Council. The exercise of these rights and privileges may be restored by the Security Council.

Article 6

A Member of the United Nations which has persistently violated the Principles contained in the present Charter may be expelled from the Organization by the General Assembly upon the recommendation of the Security Council.

CHAPTER III

Organs

Article 7

1. There are established as the principal organs of the United Nations; a General Assembly, a Security Council, an Economic and Social Council, a Trusteeship Council, an International Court of Justice, and a Secretariat.

2. Such subsidiary organs as may be found necessary may be established in accordance with the present Charter.

Article 8

The United Nations shall place no restrictions on the eligibility of men and women to participate in any capacity and under conditions of equality in its principal and subsidiary organs.

CHAPTER IV

The General Assembly Composition

Article 9

1. The General Assembly shall consist of all the members of the United Nations.

2. Each Member shall have not more than five representatives in the General Assembly.

Functions and Powers

Article 10

The General Assembly may discuss any questions or any matters within the scope of the present Charter or relating to the powers and functions of any organs provided for in the present Charter, and, except as provided in Article 12, may make recommendations to the Members of the United Nations or to the Security Council or to both on any such questions or matters.

Article 11

1. The General Assembly may consider the general principles of cooperation in the maintenance of international peace and security, including the principles governing disarmament and the regulation of armaments, and may make recommendations with regard to such principles to the Members or to the Security Council or to both.

2. The General Assembly may discuss any questions relating to the maintenance of international peace and security brought before it by any Member of the United Nations, or by the Security Council, or by a state which is not a Member of the United Nations, in accordance with Article 35, paragraph 2, and, except as provided in Article 12, may make recommendations with regard to any such question to the state or states concerned or to the Security Council or to both. Any such question on which action is necessary shall be referred to the Security Council by the General Assembly either before or after discussion.

3. The General Assembly may call the attention of the Security Council to situations which are likely to endanger international peace and security.

4. The powers of the General Assembly set forth in this Article shall not limit the general scope of Article 10.

Article 12

1. While the Security Council is exercising in respect of any dispute or situation the functions assigned to it in the present Charter, the General Assembly shall not make any recommendations with regard to that dispute or situation unless the Security Council so requests.

2. The Secretary-General, with the consent of the Security Council, shall notify the General Assembly at each session of any matters relative to the maintenance of international peace and security which are being dealt with by the Security Council and shall similarly notify the General Assembly, or the Members of the United Na-

tions if the General Assembly is not in session, immediately the Security Council ceases to deal with such matters.

Article 13

1. The General Assembly shall initiate studies and make recommendations for the purpose of:

(a) promoting international cooperation in the political field and encouraging the progressive development of international law and its codification;

(b) promoting international cooperation in the economic, social, cultural, educational, and health fields, and assisting in the realization of human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion.

2. The further responsibilities, functions and powers of the General Assembly with respect to matters mentioned in paragraph 1 (b) above are set forth in Chapters IX and X.

Article 14

Subject to the provisions of Article 12, the General Assembly may recommend measures for the peaceful adjustment of any situation, regardless of origin, which it deems likely to impair the general welfare or friendly relations among nations, including situations resulting from a violation of the provisions of the present Charter setting forth the Purposes and Principles of the United Nations.

Article 15

1. The General Assembly shall receive and consider annual and special reports from the Security Council; these reports shall include an account of the measures that the Security Council has decided upon or taken to maintain international peace and security.

2. The General Assembly shall receive and consider reports from the other organs of the United Nations.

Article 16

The General Assembly shall perform such functions with respect to the international trusteeship system as are assigned to it under Chapters XII and XIII, including the approval of the trusteeship agreements for areas not designated as strategic.

Article 17

1. The General Assembly shall consider and approve the budget of the Organization.

2. The expenses of the Organization shall be borne by the Members as apportioned by the General Assembly.

3. The General Assembly shall consider and approve any financial and budgetary arrangements with specialized agencies re-

ferred to in Article 57 and shall examine the administrative budgets of such specialized agencies with a view to making recommendations to the agencies concerned.

Voting

Article 18

1. Each member of the General Assembly shall have one vote.

2. Decisions of the General Assembly on important questions shall be made by a two-thirds majority of the members present and voting. These questions shall include: recommendations with respect to the maintenance of international peace and security, the election of the non-permanent members of the Security Council, the election of the members of the Economic and Social Council, the election of members of the Trusteeship Council in accordance with paragraph 1 (c) of Article 86, the admission of new Members to the United Nations, the suspension of the rights and privileges of membership, the expulsion of Members, questions relating to the operation of the trusteeship system, and budgetary questions.

3. Decisions on other questions, including the determination of additional categories of questions to be decided by a two-thirds majority, shall be made by a majority of the members present and voting.

Article 19

A Member of the United Nations which is in arrears in the payment of its financial contributions to the Organization shall have no vote in the General Assembly if the amount of its arrears equals or exceeds the amount of the contributions due from it for the preceding two full years. The General Assembly may, nevertheless, permit such a Member to vote if it is satisfied that the failure to pay is due to conditions beyond the control of the Member.

Procedure

Article 20

The General Assembly shall meet in regular annual sessions and in such special sessions as occasion may require. Special sessions shall be convoked by the Secretary-General at the request of the Security Council or of a majority of the Members of the United Nations.

Article 21

The General Assembly shall adopt its own rules of procedure. It shall elect its President for each session.

Article 22

The General Assembly may establish such subsidiary organs as it deems necessary for the performance of its functions.

CHAPTER V

The Security Council
Composition

Article 23

1. The Security Council shall consist of eleven Members of the United Nations. The Republic of China, France, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America shall be permanent members of the Security Council. The General Assembly shall elect six other Members of the United Nations to be non-permanent members of the Security Council, due regard being specially paid, in the first instance to the contribution of members of the United Nations to the maintenance of international peace and security and to the other purposes of the Organization, and also to equitable geographical distribution.

2. The non-permanent members of the Security Council shall be elected for a term of two years. In the first election of the non-permanent members, however, three shall be chosen for a term of one year. A retiring member shall not be eligible for immediate re-election.

3. Each member of the Security Council shall have one representative.

Functions and Powers

Article 24

1. In order to insure prompt and effective action by the United Nations, its Members confer on the Security Council primary responsibility for the maintenance of international peace and security, and agree that in carrying out its duties under this responsibility the Security Council acts on their behalf.

2. In discharging these duties the Security Council shall act in accordance with the Purposes and Principles of the United Nations. The specific powers granted to the Security Council for the discharge of these duties are laid down in Chapters VI, VII, VIII, and XII.

3. The Security Council shall submit annual and, when necessary, special reports to the General Assembly for its consideration.

Article 25

The Members of the United Nations agree to accept and carry out the decisions of the Security Council in accordance with the present Charter.

Article 26

In order to promote the establishment and maintenance of international peace and security with the least diversion for armaments of the world's human and eco-

nomic resources, the Security Council shall be responsible for formulating, with the assistance of the Military Staff Committee referred to in Article 47, plans to be submitted to the Members of the United Nations for the establishment of a system for the regulation of armaments.

Voting

Article 27

1. Each member of the Security Council shall have one vote.

2. Decisions of the Security Council on procedural matters shall be made by an affirmative vote of seven members.

3. Decisions of the Security Council on all other matters shall be made by an affirmative vote of seven members including the concurring votes of the permanent members; provided that, in decisions under Chapter VI, and under paragraph 3 of Article 52, a party to a dispute shall abstain from voting.

Procedure

Article 28

1. The Security Council shall be so organized as to be able to function continuously. Each member of the Security Council shall for this purpose be represented at all times at the seat of the Organization.

2. The Security Council shall hold periodic meetings at which each of its members may, if it so desires, be represented by a member of the government or by some other specially designated representative.

3. The Security Council may hold meetings at such places other than the seat of the Organization as in its judgment will best facilitate its work.

Article 29

The Security Council may establish such subsidiary organs as it deems necessary for the performance of its functions.

Article 30

The Security Council shall adopt its own rules of procedure, including the method of selecting its President.

Article 31

Any Member of the United Nations which is not a member of the Security Council may participate, without vote, in the discussion of any question brought before the Security Council whenever the latter considers that the interests of that Member are specially affected.

Article 32

Any Member of the United Nations which is not a member of the Security

Council or any state which is not a Member of the United Nations, if it is a party to a dispute under consideration by the Security Council, shall be invited to participate, without vote, in the discussion relating to the dispute. The Security Council shall lay down such conditions as it deems just for the participation of a state which is not a Member of the United Nations.

CHAPTER VI

Pacific Settlement of Disputes

Article 33

1. The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.

2. The Security Council shall, when it deems necessary, call upon the parties to settle their dispute by such means.

Article 34

The Security Council may investigate any dispute, or any situation which might lead to international friction or give rise to a dispute, in order to determine whether the continuance of the dispute or situation is likely to endanger the maintenance of international peace and security.

Article 35

1. Any Member of the United Nations may bring any dispute, or any situation of the nature referred to in Article 34 to the attention of the Security Council or of the General Assembly.

2. A state which is not a Member of the United Nations may bring to the attention of the Security Council or of the General Assembly any dispute to which it is a party if it accepts in advance, for the purposes of the dispute, the obligations of pacific settlement provided in the present Charter.

3. The proceedings of the General Assembly in respect of matters brought to its attention under this Article will be subject to the provisions of Articles 11 and 12.

Article 36

1. The Security Council may, at any stage of a dispute of the nature referred to in Article 33 or of a situation of like nature, recommend appropriate procedures or methods of adjustment.

2. The Security Council should take into consideration any procedures for the settlement of the dispute which have already been adopted by the parties.

3. In making recommendations under this Article the Security Council should also take into consideration that legal disputes should as a general rule be referred by the parties to the International Court of Justice in accordance with the provisions of the Statute of the Court.

Article 37

1. Should the parties to a dispute of the nature referred to in Article 33 fail to settle it by the means indicated in that Article, they shall refer it to the Security Council.

2. If the Security Council deems that the continuance of the dispute is in fact likely to endanger the maintenance of international peace and security, it shall decide whether to take action under Article 36 or to recommend such terms of settlement as it may consider appropriate.

Article 38

Without prejudice to the provisions of Articles 33 to 37, the Security Council may, if all the parties to any dispute so request, make recommendations to the parties with a view to a pacific settlement of the dispute.

CHAPTER VII

Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression

Article 39

The Security Council shall determine the existence of any threat to the peace, breach of the peace, or act of aggression and shall make recommendations, or decide what measures shall be taken in accordance with Articles 41 and 42, to maintain or restore international peace and security.

Article 40

In order to prevent an aggravation of the situation, the Security Council may, before making the recommendations or deciding upon the measures provided for in Article 39, call upon the parties concerned to comply with such provisional measures as it deems necessary or desirable. Such provisional measures shall be without prejudice to the rights, claims, or position of the parties concerned. The Security Council shall duly take account of failure to comply with such provisional measures.

Article 41

The Security Council may decide what measures not involving the use of armed force are to be employed to give effect.

to its decisions, and it may call upon the Members of the United Nations to apply such measures. These may include complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication, and the severance of diplomatic relations.

Article 42

Should the Security Council consider that measures provided for in Article 41 would be inadequate or have proved to be inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such action may include demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations.

Article 43

1. All Members of the United Nations, in order to contribute to the maintenance of international peace and security, undertake to make available to the Security Council, on its call and in accordance with a special agreement or agreements, armed forces, assistance, and facilities, including rights of passage, necessary for the purpose of maintaining international peace and security.

2. Such agreement or agreements shall govern the numbers and types of forces, their degree of readiness and general location, and the nature of the facilities and assistance to be provided.

3. The agreement or agreements shall be negotiated as soon as possible on the initiative of the Security Council. They shall be concluded between the Security Council and Members or between the Security Council and groups of Members and shall be subject to ratification by the signatory states in accordance with their respective constitutional processes.

Article 44

When the Security Council has decided to use force it shall, before calling upon a Member not represented on it to provide armed forces in fulfillment of the obligations assumed under Article 43, invite that Member, if the Member so desires, to participate in the decisions of the Security Council concerning the employment of contingents of that Member's armed forces.

Article 45

In order to enable the United Nations to take urgent military measures, Members shall hold immediately available national air-force contingents for combined international enforcement action. The strength and degree of readiness of these contingents and plans for their combined action shall be determined, within the limits laid

down in the special agreement or agreements referred to in Article 43, by the Security Council with the assistance of the Military Staff Committee.

Article 46

Plans for the application of armed force shall be made by the Security Council with the assistance of the Military Staff Committee.

Article 47

1. There shall be established a Military Staff Committee to advise and assist the Security Council on all questions relating to the Security Council's military requirements for the maintenance of international peace and security, the employment and command of forces placed at its disposal, the regulation of armaments, and possible disarmament.

2. The Military Staff Committee shall consist of the Chiefs of Staff of the permanent members of the Security Council or their representatives. Any Member of the United Nations not permanently represented on the Committee shall be invited by the Committee to be associated with it when the efficient discharge of the Committee's responsibilities requires the participation of that Member in its work.

3. The Military Staff Committee shall be responsible under the Security Council for the strategic direction of any armed forces placed at the disposal of the Security Council. Questions relating to the command of such forces shall be worked out subsequently.

4. The Military Staff Committee, with the authorization of the Security Council and after consultation with appropriate regional agencies, may establish regional subcommittees.

Article 48

1. The action required to carry out the decisions of the Security Council for the maintenance of international peace and security shall be taken by all the Members of the United Nations or by some of them, as the Security Council may determine.

2. Such decisions shall be carried out by the Members of the United Nations directly and through their action in the appropriate international agencies of which they are members.

Article 49

The Members of the United Nations shall join in affording mutual assistance in carrying out the measures decided upon by the Security Council.

Article 50

If preventive or enforcement measures against any state are taken by the Security Council, any other state, whether a

Member of the United Nations or not, which finds itself confronted with special economic problems arising from the carrying out of those measures shall have the right to consult the Security Council with regard to a solution of those problems.

Article 51

Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security. Measures taken by Members in the exercise of this right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.

CHAPTER VIII

Regional Arrangements

Article 52

1. Nothing in the present Charter precludes the existence of regional arrangements or agencies for dealing with such matters relating to the maintenance of international peace and security as are appropriate for regional action, provided that such arrangements or agencies and their activities are consistent with the Purposes and Principles of the United Nations.

2. The Members of the United Nations entering into such arrangements or constituting such agencies shall make every effort to achieve pacific settlement of local disputes through such regional arrangements or by such regional agencies before referring them to the Security Council.

3. The Security Council shall encourage the development of pacific settlement of local disputes through such regional arrangements or by such regional agencies either on the initiative of the states concerned or by reference from the Security Council.

4. This Article in no way impairs the application of Articles 34 and 35.

Article 53

1. The Security Council shall, where appropriate, utilize such regional arrangements or agencies for enforcement action under its authority. But no enforcement action shall be taken under regional arrangements or by regional agencies without the authorization of the Security Council, with the exception of measures against any enemy state, as defined in para-

graph 2 of this Article, provided for pursuant to Article 107 or in regional arrangements directed against renewal of aggressive policy on the part of any such state, until such time as the Organization may, on request of the Governments concerned, be charged with the responsibility for preventing further aggression by such a state.

2. The term enemy state as used in paragraph 1 of this Article applies to any state which during the Second World War has been an enemy of any signatory of the present Charter.

Article 54

The Security Council shall at all times be kept fully informed of activities undertaken or in contemplation under regional arrangements or by regional agencies for the maintenance of international peace and security.

CHAPTER IX

International Economic and Social Cooperation

Article 55

With a view to the creation of conditions of stability and well-being which are necessary for peaceful and friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, the United Nations shall promote:

(a) higher standards of living, full employment, and conditions of economic and social progress and development;

(b) solutions of international economic, social, health, and related problems; and international cultural and educational cooperation; and

(c) universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion.

Article 56

All Members pledge themselves to take joint and separate action in cooperation with the Organization for the achievement of the purposes set forth in Article 55.

Article 57

1. The various specialized agencies, established by intergovernmental agreement and having wide international responsibilities, as defined in their basic instruments, in economic, social, cultural, educational, health, and related fields, shall be brought into relationship with the United Nations in accordance with the provisions of Article 63.

2. Such agencies thus brought into relationship with the United Nations are

hereinafter referred to as specialized agencies.

Article 58

The Organization shall make recommendations for the coordination of the policies and activities of the specialized agencies.

Article 59

The Organization shall, where appropriate, initiate negotiations among the states concerned for the creation of any new specialized agencies required for the accomplishment of the purposes set forth in Article 55.

Article 60

Responsibility for the discharge of the functions of the Organization set forth in this Chapter shall be vested in the General Assembly and, under the authority of the General Assembly, in the Economic and Social Council, which shall have for this purpose the powers set forth in Chapter X.

CHAPTER X

Economic and Social Council

Composition

Article 61

1. The Economic and Social Council shall consist of eighteen Members of the United Nations elected by the General Assembly.

2. Subject to the provisions of paragraph 3, six members of the Economic and Social Council shall be elected each year for a term of three years. A retiring member shall be eligible for immediate re-election.

3. At the first election, eighteen members of the Economic and Social Council shall be chosen. The term of office of six members so chosen shall expire at the end of one year, and of six other members at the end of two years, in accordance with arrangements made by the General Assembly.

4. Each member of the Economic and Social Council shall have one representative.

Functions and Powers

Article 62

1. The Economic and Social Council may make or initiate studies and reports with respect to international economic, social, cultural, educational, health, and related matters and may make recommendations with respect to any such matters to the General Assembly, to the Members of the United Nations, and to the specialized agencies concerned.

2. It may make recommendations for the purpose of promoting respect for, and observance of, human rights and fundamental freedoms for all.

3. It may prepare draft conventions for submission to the General Assembly, with respect to matters falling within its competence.

4. It may call, in accordance with the rules prescribed by the United Nations international conferences on matters falling within its competence.

Article 63

1. The Economic and Social Council may enter into agreements with any of the agencies referred to in Article 57, defining the terms on which the agency concerned shall be brought into relationship with the United Nations. Such agreements shall be subject to approval by the General Assembly.

2. It may coordinate the activities of the specialized agencies through consultation with and recommendations to such agencies and through recommendations to the General Assembly and to the Members of the United Nations.

Article 64

1. The Economic and Social Council may take appropriate steps to obtain regular reports from the specialized agencies. It may make arrangements with the Members of the United Nations and with the specialized agencies to obtain reports on the steps taken to give effect to its own recommendations and to recommendations on matters falling within its competence made by the General Assembly.

2. It may communicate its observations on these reports to the General Assembly.

Article 65

The Economic and Social Council may furnish information to the Security Council and shall assist the Security Council upon its request.

Article 66

1. The Economic and Social Council shall perform such functions as fall within its competence in connection with the carrying out of the recommendations of the General Assembly.

2. It may, with the approval of the General Assembly, perform services at the request of Members of the United Nations and at the request of specialized agencies.

3. It shall perform such other functions as are specified elsewhere in the present Charter or as may be assigned to it by the General Assembly.

Voting

Article 67

1. Each member of the Economic and Social Council shall have one vote.

2. Decisions of the Economic and Social Council shall be made by a majority of the members present and voting.

Procedure

Article 68

The Economic and Social Council shall set up commissions in economic and social fields and for the promotion of human rights, and such other commissions as may be required for the performance of its functions.

Article 69

The Economic and Social Council shall invite any Member of the United Nations to participate, without vote, in its deliberations on any matter of particular concern to that Member.

Article 70

The Economic and Social Council may make arrangements for representatives of the specialized agencies to participate, without vote, in its deliberations and in those of the commissions established by it, and for its representatives to participate in the deliberations of the specialized agencies.

Article 71

The Economic and Social Council may make suitable arrangements for consultation with non-governmental organizations which are concerned with matters within its competence. Such arrangements may be made with international organizations and, where appropriate, with national organizations after consultation with the Member of the United Nations concerned.

Article 72

1. The Economic and Social Council shall adopt its own rules of procedure, including the method of selecting its President.

2. The Economic and Social Council shall meet as required in accordance with its rules, which shall include provision for the convening of meetings on the request of a majority of its members.

CHAPTER XI

Declaration Regarding Non-Self-Governing Territories

Article 73

Members of the United Nations which have or assume responsibilities for the administration of territories whose peoples have not yet attained a full measure of self-government recognize the principle that the interests of the inhabitants of these territories are paramount, and ac-

cept as a sacred trust the obligation to promote to the utmost, within the system of international peace and security established by the present Charter, the well-being of the inhabitants of these territories, and, to this end:

(a) to ensure, with due respect for the culture of the peoples concerned, their political, economic, social, and educational advancement, their just treatment, and their protection against abuses;

(b) to develop self-government, to take due account of the political aspirations of the peoples, and to assist them in the progressive development of their free political institutions, according to the particular circumstances of each territory and its peoples and their varying stages of advancement;

(c) to further international peace and security;

(d) to promote constructive measures of development, to encourage research, and to cooperate with one another and, when and where appropriate, with specialized international bodies with a view to the practical achievement of the social, economic and scientific purposes set forth in this Article; and

(e) to transmit regularly to the Secretary-General for information purposes, subject to such limitation as security and constitutional considerations may require, statistical and other information of a technical nature relating to economic, social, and educational conditions in the territories for which they are respectively responsible other than those territories to which Chapters XII and XIII apply.

Article 74

Members of the United Nations also agree that their policy in respect of the territories to which this Chapter applies, no less than in respect of their metropolitan areas, must be based on the general principle of good-neighborliness, due account being taken of the interests and well-being of the rest of the world, in social, economic, and commercial matters.

CHAPTER XII

International Trusteeship System

Article 75

The United Nations shall establish under its authority an international trusteeship system for the administration and supervision of such territories as may be placed thereunder by subsequent individual agreements. These territories are hereinafter referred to as trust territories.

Article 76

The basic objectives of the trusteeship system, in accordance with the Purposes

of the United Nations laid down in Article 1 of the present Charter, shall be:

(a) to further international peace and security;

(b) to promote the political, economic, social, and educational advancement of the inhabitants of the trust territories, and their progressive development towards self-government or independence as may be appropriate to the particular circumstances of each territory and its peoples and the freely expressed wishes of the peoples concerned, and as may be provided by the terms of each trusteeship agreement;

(c) to encourage respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion, and to encourage recognition of the interdependence of the peoples of the world; and

(d) to ensure equal treatment in social, economic, and commercial matters for all Members of the United Nations and their nationals, and also equal treatment for the latter in the administration of justice, without prejudice to the attainment of the foregoing objectives and subject to the provisions of Article 80.

Article 77

1. The trusteeship system shall apply to such territories in the following categories as may be placed thereunder by means of trusteeship agreements:

(a) territories now held under mandate;

(b) territories which may be detached from enemy states as a result of the Second World War; and

(c) territories voluntarily placed under the system by states responsible for their administration.

2. It will be a matter for subsequent agreement as to which territories in the foregoing categories will be brought under the trusteeship system and upon what terms.

Article 78

The trusteeship system shall not apply to territories which have become Members of the United Nations, relationship among which shall be based on respect for the principle of sovereign equality.

Article 79

The terms of trusteeship for each territory to be placed under the trusteeship system, including any alteration or amendment, shall be agreed upon by the states directly concerned, including the mandatory power in the case of territories held under mandate by a Member of the United Nations, and shall be approved as provided for in Articles 83 and 85.

Article 80

1. Except as may be agreed upon in individual trusteeship agreements, made under Articles 77, 79, and 81, placing each territory under the trusteeship system, and until such agreements have been concluded, nothing in this Chapter shall be construed in or of itself to alter in any manner the rights whatsoever of any states or any peoples or the terms of existing international instruments to which Members of the United Nations may respectively be parties.

2. Paragraph 1 of this Article shall not be interpreted as giving grounds for delay or postponement of the negotiation and conclusion of agreements for placing mandated and other territories under the trusteeship system as provided for in Article 77.

Article 81

The trusteeship agreement shall in each case include the terms under which the trust territory will be administered and designate the authority which will exercise the administration of the trust territory. Such authority, hereinafter called the administering authority, may be one or more states or the Organization itself.

Article 82

There may be designated, in any trusteeship agreement, a strategic area or areas which may include part or all of the trust territory to which the agreement applies, without prejudice to any special agreement or agreements made under Article 43.

Article 83

1. All functions of the United Nations relating to strategic areas, including the approval of the terms of the trusteeship agreements and of their alteration or amendment, shall be exercised by the Security Council.

2. The basic objectives set forth in Article 76 shall be applicable to the people of each strategic area.

3. The Security Council shall, subject to the provisions of the trusteeship agreements and without prejudice to security considerations, avail itself of the assistance of the Trusteeship Council to perform those functions of the United Nations under the trusteeship system relating to political, economic, social, and educational matters in the strategic areas.

Article 84

It shall be the duty of the administering authority to ensure that the trust territory shall play its part in the maintenance of international peace and security. To this end the administering authority may make use of volunteer forces, facili-

ties, and assistance from the trust territory in carrying out the obligations towards the Security Council undertaken in this regard by the administering authority, as well as for local defense and the maintenance of law and order within the trust territory.

Article 85

1. The functions of the United Nations with regard to trusteeship agreements for all areas not designated as strategic, including the approval of the terms of the trusteeship agreements and of their alteration or amendment, shall be exercised by the General Assembly.

2. The Trusteeship Council, operating under the authority of the General Assembly, shall assist the General Assembly in carrying out these functions.

CHAPTER XIII

The Trusteeship Council Composition

Article 86

1. The Trusteeship Council shall consist of the following Members of the United Nations:

(a) those Members administering trust territories;

(b) such of those Members mentioned by name in Article 23 as are not administering trust territories; and

(c) as many other Members elected for three-year terms by the General Assembly as may be necessary to ensure that the total number of members of the Trusteeship Council is equally divided between those Members of the United Nations which administer trust territories and those which do not.

2. Each member of the Trusteeship Council shall designate one specially qualified person to represent it therein.

Functions and Powers

Article 87

The General Assembly and, under its authority, the Trusteeship Council, in carrying out their functions, may:

(a) consider reports submitted by the administering authority;

(b) accept petitions and examine them in consultation with the administering authority;

(c) provide for periodic visits to the respective trust territories at times agreed upon with the administering authority; and

(d) take these and other actions in conformity with the terms of the trusteeship agreements.

Article 88

The Trusteeship Council shall formulate a questionnaire on the political, economic, social, and educational advancement of the inhabitants of each trust territory, and the administering authority for each trust territory within the competence of the General Assembly shall make an annual report to the General Assembly upon the basis of such questionnaire.

Voting

Article 89

1. Each member of the Trusteeship Council shall have one vote.

2. Decisions of the Trusteeship Council shall be made by a majority of the members present and voting.

Procedure

Article 90

1. The Trusteeship Council shall adopt its own rules of procedure, including the method of selecting its President.

2. The Trusteeship Council shall meet as required in accordance with its rules, which shall include provision for the convening of meetings on the request of a majority of its members.

Article 91

The Trusteeship Council shall, when appropriate, avail itself of the assistance of the Economic and Social Council and of the specialized agencies in regard to matters with which they are respectively concerned.

CHAPTER XIV

The International Court of Justice

Article 92

The International Court of Justice shall be the principal judicial organ of the United Nations. It shall function in accordance with the annexed Statute, which is based upon the Statute of the Permanent Court of International Justice and forms an integral part of the present Charter.

Article 93

1. All Members of the United Nations are *ipso facto* parties to the Statute of the International Court of Justice.

2. A state which is not a Member of the United Nations may become a party to the Statute of the International Court of Justice on condition to be determined in each case by the General Assembly upon the recommendation of the Security Council.

Article 94

1. Each Member of the United Nations undertakes to comply with the decision of

the International Court of Justice in any case to which it is a party.

2. If any party to a case fails to perform the obligations incumbent upon it under a judgment rendered by the Court, the other party may have recourse to the Security Council, which may, if it deems necessary, make recommendations or decide upon measures to be taken to give effect to the judgment.

Article 95

Nothing in the present Charter shall prevent Members of the United Nations from entrusting the solution of their differences to other tribunals by virtue of agreements already in existence or which may be concluded in the future.

Article 96

1. The General Assembly or the Security Council may request the International Court of Justice to give an advisory opinion on any legal question.

2. Other organs of the United Nations and specialized agencies, which may at any time be so authorized by the General Assembly, may also request advisory opinions of the Court on legal questions arising within the scope of their activities.

CHAPTER XV

The Secretariat

Article 97

The Secretariat shall comprise a Secretary-General and such staff as the Organization may require. The Secretary-General shall be appointed by the General Assembly upon the recommendation of the Security Council. He shall be the chief administrative officer of the Organization.

Article 98

The Secretary-General shall act in that capacity in all meetings of the General Assembly, of the Security Council, of the Economic and Social Council, and of the Trusteeship Council, and shall perform such other functions as are entrusted to him by these organs. The Secretary-General shall make an annual report to the General Assembly on the work of the Organization.

Article 99

The Secretary-General may bring to the attention of the Security Council any matter which in his opinion may threaten the maintenance of international peace and security.

Article 100

1. In the performance of their duties the Secretary-General and the staff shall not seek or receive instructions from any government or from any other authority external to the Organization. They shall

refrain from any action which might reflect on their position as international officials responsible only to the Organization.

2. Each Member of the United Nations undertakes to respect the exclusively international character of the responsibilities of the Secretary-General and the staff and not to seek to influence them in the discharge of their responsibilities.

Article 101

1. The staff shall be appointed by the Secretary-General under regulations established by the General Assembly.

2. Appropriate staffs shall be permanently assigned to the Economic and Social Council, the Trusteeship Council, and, as required, to other organs of the United Nations. These staffs shall form a part of the Secretariat.

3. The paramount consideration in the employment of the staff and in the determination of the conditions of service shall be the necessity of securing the highest standards of efficiency, competence, and integrity. Due regard shall be paid to the importance of recruiting the staff on as wide a geographical basis as possible.

CHAPTER XVI

Miscellaneous Provisions

Article 102

1. Every treaty and every international agreement entered into by any Member of the United Nations after the present Charter comes into force shall as soon as possible be registered with the Secretariat and published by it.

2. No party to any such treaty or international agreement which has not been registered in accordance with the provisions of paragraph 1 of this Article may invoke that treaty or agreement before any organ of the United Nations.

Article 103

In the event of a conflict between the obligations of the Members of the United Nations under the present Charter and their obligations under any other international agreement, their obligations under the present Charter shall prevail.

Article 104

The Organization shall enjoy in the territory of each of its Members such legal capacity as may be necessary for the exercise of its functions and the fulfillment of its purposes.

Article 105

1. The Organization shall enjoy in the territory of each of its Members such privileges and immunities as are necessary for the fulfillment of its purposes.

2. Representatives of the Members of the United Nations and officials of the Organization shall similarly enjoy such privileges and immunities as are necessary for the independent exercise of their functions in connection with the Organization.

3. The General Assembly may make recommendations with a view to determining the details of the application of paragraphs 1 and 2 of this Article or may propose conventions to the Members of the United Nations for this purpose.

CHAPTER XVII

Transitional Security Arrangements

Article 106

Pending the coming into force of such special agreements referred to in Article 43 as in the opinion of the Security Council enable it to begin the exercise of its responsibilities under Article 42, the parties to the Four-Nation Declaration, signed at Moscow, October 30, 1943, and France, shall, in accordance with the provisions of paragraph 5 of that Declaration, consult with one another and, as occasion requires with other Members of the United Nations with a view to such joint action on behalf of the Organization as may be necessary for the purpose of maintaining international peace and security.

Article 107

Nothing in the present Charter shall invalidate or preclude action, in relation to any state which during the Second World War has been an enemy of any signatory to the present Charter, taken or authorized as a result of that war by the Governments having responsibility for such action.

CHAPTER XVIII

Amendments

Article 108

Amendments to the present Charter shall come into force for all Members of the United Nations when they have been adopted by a vote of two-thirds of the members of the General Assembly and ratified in accordance with their respective constitutional processes by two-thirds of the Members of the United Nations, including all the permanent members of the Security Council.

Article 109

1. A General Conference of the Members of the United Nations for the purpose of reviewing the present Charter may be held at a date and place to be fixed by a two-thirds vote of the members of the General Assembly and by a vote of any seven members of the Security Council. Each Member of the United Nations shall have one vote in the conference.

2. Any alteration of the present Charter recommended by a two-thirds vote of the conference shall take effect when ratified in accordance with their respective constitutional processes by two-thirds of the Members of the United Nations including all the permanent members of the Security Council.

3. If such a conference has not been held before the tenth annual session of the General Assembly following the coming into force of the present Charter, the proposal to call such a conference shall be placed on the agenda of that session of the General Assembly, and the conference shall be held if so decided by a majority vote of the members of the General Assembly and by a vote of any seven members of the Security Council.

CHAPTER XIX

Ratification and Signature

Article 110

1. The present Charter shall be ratified by the signatory states in accordance with their respective constitutional processes.

2. The ratifications shall be deposited with the Government of the United States of America, which shall notify all the signatory states of each deposit as well as the Secretary-General of the Organization when he has been appointed.

3. The present Charter shall come into force upon the deposit of ratifications by the Republic of China, France, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, and by a majority of the other signatory states. A protocol of the ratifications deposited shall thereupon be drawn up by the Government of the United States of America which shall communicate copies thereof to all the signatory states.

4. The states signatory to the present Charter which ratify it after it has come into force will become original Members of the United Nations on the date of the deposit of their respective ratifications.

Article 111

The present Charter, of which the Chinese, French, Russian, English, and Spanish texts are equally authentic, shall remain deposited in the archives of the Government of the United States of America. Duly certified copies thereof shall be transmitted by that Government to the Governments of the other signatory states.

IN FAITH WHEREOF the representatives of the Governments of the United Nations have signed the present Charter.

DONE at the city of San Francisco the twenty-sixth day of June, one thousand nine hundred and forty-five.

SPORTS ORGANIZATIONS AND INFORMATION BUREAUS

- AMATEUR ATHLETIC UNION OF THE U. S. 233 Broadway, New York 7, N. Y.
- AMATEUR BICYCLE LEAGUE OF AMERICA. 2320 Grand Ave., New York 68, N. Y.
- AMATEUR FENCERS LEAGUE OF AMERICA. 70 E. 45th St., New York 17, N. Y.
- AMATEUR HOCKEY ASSN. OF THE U. S. Madison Square Garden, 307 W. 49th St., New York 19, N. Y.
- AMATEUR SKATING UNION OF THE U. S. 2963 N. 90th St., Milwaukee 10, Wis.
- AMATEUR SOFTBALL ASSN. OF AMERICA. Suite 401, 11 Hill St., Newark 2, N. J.
- AMATEUR TRAPSHOOTING ASSN. OF AMERICA. Vandalia, Ohio
- AMERICAN AMATEUR BASEBALL CONGRESS. Box 44, Battle Creek, Mich.
- AMERICAN BADMINTON ASSN. 905 So. Los Robles Ave., Pasadena, Calif.
- AMERICAN BOWLING CONGRESS. 1572 E. Capitol Drive, Milwaukee 11, Wis.
- AMERICAN CANOE ASSN. 500 11th St., Brooklyn 15, N. Y.
- AMERICAN HOCKEY LEAGUE. Box 190, Hempstead, N. Y.
- AMERICAN HORSE SHOWS ASSN. 90 Broad St., New York 4.
- AMERICAN KENNEL CLUB. 221 Fourth Ave., New York 3.
- AMERICAN LAWN BOWLING ASSN. 48 Maynard St., Providence 9, Mass.
- AMERICAN LEAGUE SERVICE BUREAU (Baseball). 310 S. Michigan Ave., Chicago 4, Ill.
- AMERICAN MOTORCYCLE ASSOCIATION. 106 Buttlers Ave., Columbus 8, Ohio
- AMERICAN POWER BOAT ASSN. 2534 St. Aubin Ave., Detroit 7, Mich.
- AMERICAN RACING DRIVERS CLUB (midget auto racing). 309 West 50th St., New York 19, N. Y.
- AMERICAN ROQUE LEAGUE, 5439 Vanderbilt Ave., Dallas 6, Texas.
- AMERICAN WATER SKI ASSN. 307 N. Michigan Ave., Chicago 1, Ill.
- BASEBALL COMMISSIONER FORD C. FRICK. 30 Rockefeller Plaza, New York 20, N. Y.
- BILLIARD CONGRESS OF AMERICA. 921 Edison Bldg., Toledo, Ohio.
- BOWLING PROPRIETORS' ASSN. OF AMERICA. 185 N. Wabash Ave., Chicago 1, Ill.
- EASTERN COLLEGE ATHLETIC CONFERENCE. Military Park Hotel, 16 Park Place, Newark, N. J.
- ELIAS BASEBALL BUREAU, 11 West 42d St., New York 36
- FISH AND WILDLIFE SERVICE. Dept. of the Interior, Washington 25, D. C.
- GREATER NEW YORK RACING ASSN. SERVICE BUREAU, 300 Park Ave., New York 22, N. Y.
- INTERNATL. AMATEUR ATHLETIC FEDERATION. Halton House, 23 Holborn, London, E. C. 1, England.
- INTERNATIONAL GAME FISH ASSN. American Museum of Natural History, New York 24, N. Y.
- THE JOCKEY CLUB, 300 Park Ave., New York City.
- LITTLE LEAGUE BASEBALL. Williamsport, Pa.
- NATL. ARCHERY ASSN. OF THE U. S. 20212 Bayview Ave., Santa Ana, Calif.
- NATL. ASSN. OF AMATEUR OARSMEN. 119 Heller Parkway, Newark 4, N. J.
- NATL. ASSN. OF ANGLING AND CASTING CLUBS. P. O. Box 51, Nashville, Tenn.
- NATL. ASSN. OF PROFESSIONAL BASEBALL LEAGUE (Minors). 720 E. Broad St., Columbus 15, Ohio
- NATL. ASSN. OF STATE RACING COMMISSIONERS. Box 156, Lexington, Ky.
- NATL. BASEBALL CONGRESS. Wichita 1, Kans.
- NATL. BASKETBALL ASSN. Empire State Bldg., N. Y.
- NATL. BOXING ASSN. Room 2053, New Municipal Center, Washington 1, D. C.
- NATL. COLLEGIATE ATHLETIC ASSN. Fairfax Bldg., 11th and Baltimore, Kansas City 6, Mo.
- NATL. DUCK PIN BOWLING CONGRESS. 1420 New York Ave., N.W., Washington 5, D. C.
- NATL. FOOTBALL LEAGUE. One Bala Ave., Bala Cynwyd, Pa.
- NATL. HOCKEY LEAGUE. Sun Life Bldg., Montreal, Quebec
- NATL. HORSESHOE PITCHERS ASSN. 15316 Cabel Ave., Bellflower, Calif.
- NATL. LEAGUE SERVICE BUREAU (Baseball). Carew Tower, Cincinnati 2, Ohio
- NATL. RIFLE ASSN. OF AMERICA. 1600 Rhode Island Ave., Washington 6, D. C.
- NATL. SKEET SHOOTING ASSN. 3409 Oak Lawn Ave., Dallas 19, Texas.
- NATL. SKI ASSN. 100 West 13th Ave., Denver 4, Colo.
- NEW YORK STATE ATHLETIC (BOXING) COMMISSIONER. 226 W. 47th St., New York 36, N. Y.
- NORTH AMERICAN YACHT RACING UNION. 37 West 44th St., New York 18, N. Y.
- PROFESSIONAL GOLFERS' ASSN. OF AMERICA. Broadway and Main St., Dunedin, Fla.
- PROFESSIONAL HORSEMEN'S ASSN. 716 Madison Ave., New York City.
- PROFESSIONAL LAWN TENNIS ASSN. OF THE U. S. 1 E. 54th St., New York 22, N. Y.
- ROLLER SKATING RINK OPERATORS ASSN. OF AMERICA. 625 W. Seven Mile Rd., Detroit 3, Mich.
- THOROUGHbred RACING ASSNS. OF THE U. S. 925 Chrysler Bldg., New York 17, N. Y.
- U. S. AMATEUR ROLLER SKATING ASSN. 120 West 41st St., New York 18, N. Y.
- U. S. CHESS FEDERATION. 208 S. La Salle St., Chicago 4.
- U. S. FIELD HOCKEY ASSN. 24 Park Place, Rockville Centre, N. Y.
- U. S. FIGURE SKATING ASSN. Rm. 505, 30 Huntington Ave., Boston, Mass.
- U. S. GOLF ASSN. 40 E. 38th St., New York 16, N. Y.
- U. S. HANDBALL ASSN. 505 No. Michigan Ave., Chicago
- U. S. LAWN TENNIS ASSN. 120 Broadway, New York 5, N. Y.
- U. S. OLYMPIC ASSN. Biltmore Hotel, New York 17, N. Y.
- U. S. POLO ASSN. 250 Park Ave., New York 17, N. Y.
- U. S. SOCCER FOOTBALL ASSN. 320 Fifth Ave., New York
- U. S. SQUASH RACQUETS ASSN. Rm. 1105, 120 Broadway, New York 5, N. Y.
- U. S. TABLE TENNIS ASSN. 6625 So. Winchester, Chicago
- U. S. TROTTER ASSN. 1349 E. Broad St., Columbus 5, Ohio
- U. S. VOLLEYBALL ASSN. Rm. 1705, 291 Broadway, New York 7, N. Y.
- WESTERN HOCKEY LEAGUE. Grosvenor House, 500 Wall St., Seattle 1, Wash.
- WOMAN'S INTERNATIONAL BOWLING CONGRESS. 6941 High St., Columbus 6, Ohio.

SPORTS



For 1957 sports champions and records,
see special section beginning on Page 903.

BASEBALL

THE POPULAR TRADITION that baseball was invented by Abner Doubleday at Cooperstown, N. Y., in 1839, has been enshrined in the Hall of Fame and National Museum of Baseball erected in that town, but research has proved that a game called "Base Ball" was played in this country and England before 1839. However, the first team baseball as we know it was played at the Elysian Fields, Hoboken, N. J., on June 19, 1846, between the Knickerbockers and the New York Nine. There was a gradual growth of baseball and an improvement of equipment and playing skill in the next fifty years. Soldiers returning home from the Civil War spread over the country the game they had learned to play in camp.

Historians have it that the first pitcher to throw a curve was William A. (Candy) Cummings in 1867. The Cincinnati Red Stockings were the first all-professional team and in 1869 they played 64 games without a loss. The standard ball of the

same size and weight, still the rule, was adopted in 1872. The first catcher's mask was worn in 1875. The National League was organized in 1876. The first chest protector was donned in 1885. The three-strike rule was put on the books in 1887 and the four-ball ticket to first base came in 1889. The pitching distance, formerly shorter, was lengthened to 60 feet 6 inches in 1893 and the rules have been only slightly modified since that time.

The American League, under the vigorous leadership of B. B. Johnson, blossomed forth as a major league in 1901. Judge Kenesaw Mountain Landis, by action of the two major leagues, became Commissioner of Baseball in 1921 and, upon his death (1944), Albert B. Chandler, former United States Senator from Kentucky, was elected to that office (1945). Chandler failed to obtain a new contract, and he was succeeded by Ford C. Frick (1951), the National League president.

PROFESSIONAL BASEBALL GOVERNMENT

NATIONAL LEAGUE—AMERICAN LEAGUE—NATIONAL ASSOCIATION

Ford C. Frick, Commissioner

Charles M. Segar, Secretary-Treasurer

30 Rockefeller Plaza, New York 20, N. Y.

NATIONAL LEAGUE

Warren C. Giles

President-Secretary-Treasurer

Office: Carew Tower,

Cincinnati 2, Ohio

Service Bureau: Dave Grote, Manager

AMERICAN LEAGUE

William Harridge

President-Secretary-Treasurer

Office: 310 South Michigan Blvd.,

Chicago 4, Ill.

Service Bureau: Earl J. Hilligan, Manager

NATIONAL ASSOCIATION

George M. Trautman

President-Treasurer

Carl Lundquist

Director of Public Relations

720 East Broad St., Columbus 15, Ohio

Baseball Statistics

Source: *The Little Red Book of Baseball*, published by The Elias Baseball Bureau, New York City.

Record of World Series Games

Figures in parentheses indicate number of victories for each club. Pitchers named are winner and loser, respectively.

1903—BOSTON A. L. (5) vs. PITTSBURGH N. L. (3)

Managers—J. J. Collins, Boston; F. C. Clarke, Pittsburgh.

Oct. 1—Pittsburgh (Phillippe).....	7	Boston (Young).....	3	At Boston
Oct. 2—Boston (Dinneen).....	3	Pittsburgh (Leever).....	0	At Boston
Oct. 3—Pittsburgh (Phillippe).....	4	Boston (Hughes).....	2	At Boston
Oct. 6—Pittsburgh (Phillippe).....	5	Boston (Dinneen).....	4	At Pittsburgh
Oct. 7—Boston (Young).....	11	Pittsburgh (Kennedy).....	2	At Pittsburgh
Oct. 8—Boston (Dinneen).....	6	Pittsburgh (Leever).....	3	At Pittsburgh
Oct. 10—Boston (Young).....	7	Pittsburgh (Phillippe).....	3	At Pittsburgh
Oct. 13—Boston (Dinneen).....	3	Pittsburgh (Phillippe).....	0	At Boston

1904—No Series

1905—NEW YORK N. L. (4) vs. PHILADELPHIA A. L. (1)

Managers—John J. McGraw, New York; Connie Mack, Philadelphia.

Oct. 9—New York (Mathewson).....	3	Philadelphia (Plank).....	0	At Philadelphia
Oct. 10—Philadelphia (Bender).....	3	New York (McGinnity).....	0	At New York
Oct. 12—New York (Mathewson).....	9	Philadelphia (Coakley).....	0	At Philadelphia
Oct. 13—New York (McGinnity).....	1	Philadelphia (Plank).....	0	At New York
Oct. 14—New York (Mathewson).....	2	Philadelphia (Bender).....	0	At New York

1906—CHICAGO A. L. (4) vs. CHICAGO N. L. (2)

Managers—Fleider Jones, Chicago A. L.; Frank L. Chance, Chicago N. L.

Oct. 9—Chicago A (Altrock).....	2	Chicago N (Brown).....	1	At Chicago Nat. Pk.
Oct. 10—Chicago N (Reulbach).....	7	Chicago A (White).....	1	At Chicago Am. Pk.
Oct. 11—Chicago A (Walsh).....	3	Chicago N (Pfister).....	0	At Chicago Nat. Pk.
Oct. 12—Chicago N (Brown).....	1	Chicago A (Altrock).....	0	At Chicago Am. Pk.
Oct. 13—Chicago A (Walsh).....	8	Chicago N (Pfister).....	6	At Chicago Nat. Pk.
Oct. 14—Chicago A (White).....	8	Chicago N (Brown).....	3	At Chicago Am. Pk.

1907—CHICAGO N. L. (4) vs. DETROIT A. L. (0)

Managers—Frank L. Chance, Chicago; Hugh Jennings, Detroit.

Oct. 8—Chicago (tie).....	3	Detroit (tie).....	3	At Chicago (12 inn.)
Oct. 9—Chicago (Pfister).....	3	Detroit (Mullin).....	1	At Chicago
Oct. 10—Chicago (Reulbach).....	5	Detroit (Siever).....	1	At Chicago
Oct. 11—Chicago (Overall).....	6	Detroit (Donovan).....	1	At Detroit
Oct. 12—Chicago (Brown).....	2	Detroit (Mullin).....	0	At Detroit

1908—CHICAGO N. L. (4) vs. DETROIT A. L. (1)

Managers—Frank L. Chance, Chicago; Hugh Jennings, Detroit.

Oct. 10—Chicago (Brown).....	10	Detroit (Summers).....	6	At Detroit
Oct. 11—Chicago (Overall).....	6	Detroit (Donovan).....	1	At Chicago
Oct. 12—Detroit (Mullin).....	8	Chicago (Pfister).....	3	At Chicago
Oct. 13—Chicago (Brown).....	3	Detroit (Summers).....	0	At Detroit
Oct. 14—Chicago (Overall).....	2	Detroit (Donovan).....	0	At Detroit

1909—PITTSBURGH N. L. (4) vs. DETROIT A. L. (3)

Managers—Fred C. Clarke, Pittsburgh; Hugh Jennings, Detroit.

Oct. 8—Pittsburgh (Adams).....	4	Detroit (Mullin).....	1	At Pittsburgh
Oct. 9—Detroit (Donovan).....	7	Pittsburgh (Camnitz).....	2	At Pittsburgh
Oct. 11—Pittsburgh (Maddox).....	8	Detroit (Summers).....	6	At Detroit
Oct. 12—Detroit (Mullin).....	5	Pittsburgh (Leifield).....	0	At Detroit
Oct. 13—Pittsburgh (Adams).....	8	Detroit (Summers).....	4	At Pittsburgh
Oct. 14—Detroit (Mullin).....	5	Pittsburgh (Willis).....	4	At Detroit
Oct. 16—Pittsburgh (Adams).....	8	Detroit (Donovan).....	0	At Detroit

1910—PHILADELPHIA A. L. (4) vs. CHICAGO N. L. (1)

Managers—Connie Mack, Philadelphia; Frank L. Chance, Chicago.

Oct. 17—Philadelphia (Bender).....	4	Chicago (Overall).....	1	At Philadelphia
Oct. 18—Philadelphia (Coombs).....	9	Chicago (Brown).....	3	At Philadelphia
Oct. 20—Philadelphia (Coombs).....	12	Chicago (McIntire).....	5	At Chicago
Oct. 22—Chicago (Brown).....	4	Philadelphia (Bender).....	3	At Chicago (10 inn.)
Oct. 23—Philadelphia (Coombs).....	7	Chicago (Brown).....	2	At Chicago

1911—PHILADELPHIA A. L. (4) vs. NEW YORK N. L. (2)

Managers—Connie Mack, Philadelphia; John J. McGraw, New York.

Oct. 14—New York (Mathewson).....	2	Philadelphia (Bender).....	1	At New York
Oct. 16—Philadelphia (Plank).....	3	New York (Marquard).....	1	At Philadelphia
Oct. 17—Philadelphia (Coombs).....	3	New York (Mathewson).....	2	At New York (11 inn.)
Oct. 24—Philadelphia (Bender).....	4	New York (Mathewson).....	2	At Philadelphia
Oct. 25—New York (Crandall).....	4	Philadelphia (Plank).....	3	At New York (10 inn.)
Oct. 26—Philadelphia (Bender).....	13	New York (Ames).....	2	At Philadelphia

1912—BOSTON A. L. (4) vs. NEW YORK N. L. (3)

Managers—J. Garland Stahl, Boston; John J. McGraw, New York.

Oct. 8—Boston (Wood).....	4	New York (Tesreau).....	3	At New York
Oct. 9—Boston (tie).....	6	New York (tie).....	6	At Boston (11 inn.)
Oct. 10—New York (Marquard).....	2	Boston (O'Brien).....	1	At Boston
Oct. 11—Boston (Wood).....	3	New York (Tesreau).....	1	At New York
Oct. 12—Boston (Bedient).....	2	New York (Mathewson).....	1	At Boston
Oct. 14—New York (Marquard).....	5	Boston (O'Brien).....	2	At New York
Oct. 15—New York (Tesreau).....	11	Boston (Wood).....	4	At Boston
Oct. 16—Boston (Wood).....	3	New York (Mathewson).....	2	At Boston (10 inn.)

1913—PHILADELPHIA A. L. (4) vs. NEW YORK N. L. (1)

Managers—Connie Mack, Philadelphia; John J. McGraw, New York.

Oct. 7—Philadelphia (Bender).....	6	New York (Marquard).....	4	At New York
Oct. 8—New York (Mathewson).....	3	Philadelphia (Plank).....	0	At Philadelphia (10 inn.)
Oct. 9—Philadelphia (Bush).....	8	New York (Tesreau).....	2	At New York
Oct. 10—Philadelphia (Bender).....	6	New York (Demaree).....	5	At Philadelphia
Oct. 11—Philadelphia (Plank).....	3	New York (Mathewson).....	1	At New York

1914—BOSTON N. L. (4) vs. PHILADELPHIA A. L. (0)

Managers—George T. Stallings, Boston; Connie Mack, Philadelphia.

Oct. 9—Boston (Rudolph).....	7	Philadelphia (Bender).....	1	At Philadelphia
Oct. 10—Boston (James).....	1	Philadelphia (Plank).....	0	At Philadelphia
Oct. 12—Boston (James).....	5	Philadelphia (Bush).....	4	At Boston (12 inn.)
Oct. 13—Boston (Rudolph).....	3	Philadelphia (Shawkey).....	1	At Boston

1915—BOSTON A. L. (4) vs. PHILADELPHIA N. L. (1)

Managers—William Carrigan, Boston; Patrick J. Moran, Philadelphia.

Oct. 8—Philadelphia (Alexander).....	3	Boston (Shore).....	1	At Philadelphia
Oct. 9—Boston (Foster).....	2	Philadelphia (Mayer).....	1	At Philadelphia
Oct. 11—Boston (Leonard).....	2	Philadelphia (Alexander).....	1	At Boston
Oct. 12—Boston (Shore).....	2	Philadelphia (Chalmers).....	1	At Boston
Oct. 13—Boston (Foster).....	5	Philadelphia (Rixey).....	4	At Philadelphia

1916—BOSTON A. L. (4) vs. BROOKLYN N. L. (1)

Managers—William Carrigan, Boston; Wilbert J. Robinson, Brooklyn.

Oct. 7—Boston (Shore).....	6	Brooklyn (Marquard).....	5	At Boston
Oct. 9—Boston (Ruth).....	2	Brooklyn (Smith).....	1	At Boston (14 inn.)
Oct. 10—Brooklyn (Coombs).....	4	Boston (Mays).....	3	At Brooklyn
Oct. 11—Boston (Leonard).....	6	Brooklyn (Marquard).....	2	At Brooklyn
Oct. 12—Boston (Shore).....	4	Brooklyn (Pfeffer).....	1	At Boston

1917—CHICAGO A. L. (4) NEW YORK N. L. (2)

Managers—Clarence H. Rowland, Chicago; John J. McGraw, New York.

Oct. 6—Chicago (Cicotte).....	2	New York (Sallee).....	1	At Chicago
Oct. 7—Chicago (Faber).....	7	New York (Anderson).....	2	At Chicago
Oct. 10—New York (Benton).....	2	Chicago (Cicotte).....	0	At New York
Oct. 11—New York (Schupp).....	5	Chicago (Faber).....	0	At New York
Oct. 13—Chicago (Faber).....	8	New York (Sallee).....	5	At Chicago
Oct. 15—Chicago (Faber).....	4	New York (Benton).....	2	At New York

1918—BOSTON A. L. (4) vs. CHICAGO N. L. (2)

Managers—E. G. Barrow, Boston; Fred L. Mitchell, Chicago.

Sept. 5—Boston (Ruth).....	1	Chicago (Vaughn).....	0	At Chicago
Sept. 6—Chicago (Tyler).....	3	Boston (Bush).....	1	At Chicago
Sept. 7—Boston (Mays).....	2	Chicago (Vaughn).....	1	At Chicago
Sept. 9—Boston (Ruth).....	3	Chicago (Douglas).....	2	At Boston
Sept. 10—Chicago (Vaughn).....	3	Boston (Jones).....	0	At Boston
Sept. 11—Boston (Mays).....	2	Chicago (Tyler).....	1	At Boston

1919—CINCINNATI N. L. (5) vs. CHICAGO A. L. (3)

Managers—Patrick J. Moran, Cincinnati; William Gleason, Chicago.

Oct. 1—Cincinnati (Ruether).....	9	Chicago (Cicotte).....	1	At Cincinnati
Oct. 2—Cincinnati (Sallee).....	4	Chicago (Williams).....	2	At Cincinnati
Oct. 3—Chicago (Kerr).....	3	Cincinnati (Fisher).....	0	At Chicago
Oct. 4—Cincinnati (Ring).....	2	Chicago (Cicotte).....	0	At Chicago
Oct. 6—Cincinnati (Eller).....	5	Chicago (Williams).....	0	At Chicago
Oct. 7—Chicago (Kerr).....	5	Cincinnati (Ring).....	4	At Cincinnati
Oct. 8—Chicago (Cicotte).....	4	Cincinnati (Sallee).....	1	At Cincinnati
Oct. 9—Cincinnati (Eller).....	10	Chicago (Williams).....	5	At Chicago (10 inn.)

1920—CLEVELAND A. L. (5) vs. BROOKLYN N. L. (2)

Managers—Tris Speaker, Cleveland; Wilbert J. Robinson, Brooklyn.

Oct. 5—Cleveland (Coveleskie).....	3	Brooklyn (Marquard).....	1	At Brooklyn
Oct. 6—Brooklyn (Grimes).....	3	Cleveland (Bagby).....	0	At Brooklyn
Oct. 7—Brooklyn (Smith).....	2	Cleveland (Caldwell).....	1	At Brooklyn
Oct. 9—Cleveland (Coveleskie).....	5	Brooklyn (Cadore).....	1	At Cleveland
Oct. 10—Cleveland (Bagby).....	8	Brooklyn (Grimes).....	1	At Cleveland
Oct. 11—Cleveland (Mails).....	1	Brooklyn (Smith).....	0	At Cleveland
Oct. 12—Cleveland (Coveleskie).....	3	Brooklyn (Grimes).....	0	At Cleveland

1921—NEW YORK N. L. (5) vs. NEW YORK A. L. (3)

Managers—John J. McGraw, New York N. L.; Miller J. Huggins, New York A. L.

Oct. 5—New York A (Mays).....	3	New York N (Nehf).....	0	At Polo Grounds
Oct. 6—New York A (Hoyt).....	3	New York N (Douglas).....	0	At Polo Grounds
Oct. 7—New York N (Barnes).....	13	New York A (Quinn).....	5	At Polo Grounds
Oct. 9—New York N (Douglas).....	4	New York A (Mays).....	2	At Polo Grounds
Oct. 10—New York A (Hoyt).....	3	New York N (Nehf).....	1	At Polo Grounds
Oct. 11—New York N (Barnes).....	8	New York A (Shawkey).....	5	At Polo Grounds
Oct. 12—New York N (Douglas).....	2	New York A (Mays).....	1	At Polo Grounds
Oct. 13—New York N (Nehf).....	1	New York A (Hoyt).....	0	At Polo Grounds

1922—NEW YORK N. L. (4) vs. NEW YORK A. L. (0)

Managers—John J. McGraw, New York N. L.; Miller J. Huggins, New York A. L.

Oct. 4—New York N (Ryan).....	3	New York A (Bush).....	2	At Polo Grounds
Oct. 5—New York N (tie).....	3	New York A (tie).....	3	At Polo Grounds (10 inn.)
Oct. 6—New York N (Scott).....	3	New York A (Hoyt).....	0	At Polo Grounds
Oct. 7—New York N (McQuillan).....	4	New York A (Mays).....	3	At Polo Grounds
Oct. 8—New York N (Nehf).....	5	New York A (Bush).....	3	At Polo Grounds

1923—NEW YORK A. L. (4) vs. NEW YORK N. L. (2)

Managers—Miller J. Huggins, New York A. L.; John J. McGraw, New York N. L.

Oct. 10—New York N (Ryan).....	5	New York A (Bush).....	4	At Yankee Stadium
Oct. 11—New York A (Pennock).....	4	New York N (McQuillan).....	2	At Polo Grounds
Oct. 12—New York N (Nehf).....	1	New York A (Jones).....	0	At Yankee Stadium
Oct. 13—New York A (Shawkey).....	8	New York N (Scott).....	4	At Polo Grounds
Oct. 14—New York A (Bush).....	8	New York N (Bentley).....	1	At Yankee Stadium
Oct. 15—New York A (Pennock).....	6	New York N (Nehf).....	4	At Polo Grounds

1924—WASHINGTON A. L. (4) vs. NEW YORK N. L. (3)

Managers—Stanley R. Harris, Washington; John J. McGraw, New York.

Oct. 4—New York (Nehf).....	4	Washington (Johnson).....	3	At Washington (12 inn.)
Oct. 5—Washington (Zachary).....	4	New York (Bentley).....	3	At Washington
Oct. 6—New York (McQuillan).....	6	Washington (Marberry).....	4	At New York
Oct. 7—Washington (Mogridge).....	7	New York (Barnes).....	4	At New York
Oct. 8—New York (Bentley).....	6	Washington (Johnson).....	2	At New York
Oct. 9—Washington (Zachary).....	2	New York (Nehf).....	1	At Washington
Oct. 10—Washington (Johnson).....	4	New York (Bentley).....	3	At Washington (12 inn.)

1925—PITTSBURGH N. L. (4) vs. WASHINGTON A. L. (3)

Managers—William B. McKechnie, Pittsburgh; Stanley R. Harris, Washington.

Oct. 7—Washington (Johnson).....	4	Pittsburgh (Meadows).....	1	At Pittsburgh
Oct. 8—Pittsburgh (Aldridge).....	3	Washington (Coveleskie).....	2	At Pittsburgh
Oct. 10—Washington (Ferguson).....	4	Pittsburgh (Kremer).....	3	At Washington
Oct. 11—Washington (Johnson).....	4	Pittsburgh (Yde).....	0	At Washington
Oct. 12—Pittsburgh (Aldridge).....	6	Washington (Coveleskie).....	3	At Washington
Oct. 13—Pittsburgh (Kremer).....	3	Washington (Ferguson).....	2	At Pittsburgh
Oct. 15—Pittsburgh (Kremer).....	9	Washington (Johnson).....	7	At Pittsburgh

1926—ST. LOUIS N. L. (4) vs. NEW YORK A. L. (3)

Managers—Rogers Hornsby, St. Louis; Miller J. Huggins, New York.

Oct. 2—New York (Pennock).....	2	St. Louis (Sherdel).....	1	At New York
Oct. 3—St. Louis (Alexander).....	6	New York (Shocker).....	2	At New York
Oct. 5—St. Louis (Haines).....	4	New York (Ruether).....	0	At St. Louis
Oct. 6—New York (Hoyt).....	10	St. Louis (Reinhart).....	5	At St. Louis
Oct. 7—New York (Pennock).....	3	St. Louis (Sherdel).....	2	At St. Louis (10 inn.)
Oct. 9—St. Louis (Alexander).....	10	New York (Shawkey).....	2	At New York
Oct. 10—St. Louis (Haines).....	3	New York (Hoyt).....	2	At New York

1927—NEW YORK A. L. (4) vs. PITTSBURGH N. L. (0)

Managers—Miller J. Huggins, New York; Owen J. Bush, Pittsburgh.

Oct. 5—New York (Hoyt).....	5	Pittsburgh (Kremer).....	4	At Pittsburgh
Oct. 6—New York (Pipgras).....	6	Pittsburgh (Aldridge).....	2	At Pittsburgh
Oct. 7—New York (Pennock).....	8	Pittsburgh (Meadows).....	1	At New York
Oct. 8—New York (Moore).....	4	Pittsburgh (Miljus).....	3	At New York

1928—NEW YORK A. L. (4) vs. ST. LOUIS N. L. (0)

Managers—Miller J. Huggins, New York; William B. McKechnie, St. Louis.

Oct. 4—New York (Hoyt).....	4	St. Louis (Sherdel).....	1	At New York
Oct. 5—New York (Pipgras).....	9	St. Louis (Alexander).....	3	At New York
Oct. 7—New York (Zachary).....	7	St. Louis (Haines).....	3	At St. Louis
Oct. 9—New York (Hoyt).....	7	St. Louis (Sherdel).....	3	At St. Louis

1929—PHILADELPHIA A. L. (4) vs. CHICAGO N. L. (1)

Managers—Connie Mack, Philadelphia; Joseph V. McCarthy, Chicago.

Oct. 8—Philadelphia (Ehmke).....	3	Chicago (Root).....	1	At Chicago
Oct. 9—Philadelphia (Earnshaw).....	9	Chicago (Malone).....	3	At Chicago
Oct. 11—Chicago (Bush).....	3	Philadelphia (Earnshaw).....	1	At Philadelphia
Oct. 12—Philadelphia (Rommel).....	10	Chicago (Blake).....	8	At Philadelphia
Oct. 14—Philadelphia (Walberg).....	3	Chicago (Malone).....	2	At Philadelphia

1930—PHILADELPHIA A. L. (4) vs. ST. LOUIS N. L. (2)

Managers—Connie Mack, Philadelphia; Charles E. Street, St. Louis.

Oct. 1—Philadelphia (Grove).....	5	St. Louis (Grimes).....	2	At Philadelphia
Oct. 2—Philadelphia (Hallahan).....	6	St. Louis (Rhem).....	1	At Philadelphia
Oct. 4—St. Louis (Hallahan).....	5	Philadelphia (Walberg).....	0	At St. Louis
Oct. 5—St. Louis (Haines).....	3	Philadelphia (Grove).....	1	At St. Louis
Oct. 6—Philadelphia (Grove).....	2	St. Louis (Grimes).....	0	At St. Louis
Oct. 8—Philadelphia (Earnshaw).....	8	St. Louis (Hallahan).....	1	At Philadelphia

1931—ST. LOUIS N. L. (4) vs. PHILADELPHIA A. L. (3)

Managers—Charles E. Street, St. Louis; Connie Mack, Philadelphia.

Oct. 1—Philadelphia (Grove).....	6	St. Louis (Derringer).....	2	At St. Louis
Oct. 2—St. Louis (Hallahan).....	2	Philadelphia (Earnshaw).....	0	At St. Louis
Oct. 5—St. Louis (Grimes).....	5	Philadelphia (Grove).....	2	At Philadelphia
Oct. 6—Philadelphia (Earnshaw).....	3	St. Louis (Johnson).....	0	At Philadelphia
Oct. 7—St. Louis (Hallahan).....	5	Philadelphia (Hoyt).....	1	At Philadelphia
Oct. 9—Philadelphia (Grove).....	8	St. Louis (Derringer).....	1	At St. Louis
Oct. 10—St. Louis (Grimes).....	4	Philadelphia (Earnshaw).....	2	At St. Louis

1932—NEW YORK A. L. (4) vs. CHICAGO N. L. (0)

Managers—Joseph V. McCarthy, New York; Charles J. Grimm, Chicago.

Sept. 28—New York (Ruffing).....	12	Chicago (Bush).....	6	At New York
Sept. 29—New York (Gomez).....	5	Chicago (Warneke).....	2	At New York
Oct. 1—New York (Pipgras).....	7	Chicago (Root).....	5	At Chicago
Oct. 2—New York (Moore).....	13	Chicago (May).....	6	At Chicago

1933—NEW YORK N. L. (4) vs. WASHINGTON A. L. (1)

Managers—William H. Terry, New York; Joseph E. Cronin, Washington.

Oct. 3—New York (Hubbell).....	4	Washington (Stewart).....	2	At New York
Oct. 4—New York (Schumacher).....	6	Washington (Crowder).....	1	At New York
Oct. 5—Washington (Whitehill).....	4	New York (Fitzsimmons).....	0	At Washington
Oct. 6—New York (Hubbell).....	2	Washington (Weaver).....	1	At Washington (11 inn.)
Oct. 7—New York (Luque).....	4	Washington (Russell).....	3	At Washington (10 inn.)

1934—ST. LOUIS N. L. (4) vs. DETROIT A. L. (3)

Managers—Frank F. Frisch, St. Louis; Gordon S. Cochrane, Detroit.

Oct. 3—St. Louis (J. Dean).....	8	Detroit (Crowder).....	3	At Detroit
Oct. 4—Detroit (Rowe).....	3	St. Louis (W. Walker).....	2	At Detroit (12 inn.)
Oct. 5—St. Louis (P. Dean).....	4	Detroit (Bridges).....	1	At St. Louis
Oct. 6—Detroit (Auker).....	10	St. Louis (W. Walker).....	4	At St. Louis
Oct. 7—Detroit (Bridges).....	3	St. Louis (J. Dean).....	1	At St. Louis
Oct. 8—St. Louis (P. Dean).....	4	Detroit (Rowe).....	3	At Detroit
Oct. 9—St. Louis (J. Dean).....	11	Detroit (Auker).....	0	At Detroit

1935—DETROIT A. L. (4) vs. CHICAGO N. L. (2)

Managers—Gordon S. Cochrane, Detroit; Charles J. Grimm, Chicago.

Oct. 2—Chicago (Warneke).....	3	Detroit (Rowe).....	0	At Detroit
Oct. 3—Detroit (Bridges).....	8	Chicago (Root).....	3	At Detroit
Oct. 4—Detroit (Rowe).....	6	Chicago (French).....	5	At Chicago (11 inn.)
Oct. 5—Detroit (Crowder).....	2	Chicago (Carleton).....	1	At Chicago
Oct. 6—Chicago (Warneke).....	3	Detroit (Rowe).....	1	At Chicago
Oct. 7—Detroit (Bridges).....	4	Chicago (French).....	3	At Detroit

1936—NEW YORK A. L. (4) vs. NEW YORK N. L. (2)

Managers—Joseph V. McCarthy, Yankees; William H. Terry, Giants.

Sept. 30—Giants (Hubbell).....	6	Yankees (Ruffing).....	1	At Polo Grounds
Oct. 2—Yankees (Gomez).....	18	Giants (Schumacher).....	4	At Polo Grounds
Oct. 3—Yankees (Hadley).....	2	Giants (Fitzsimmons).....	1	At Yankee Stadium
Oct. 4—Yankees (Pearson).....	5	Giants (Hubbell).....	2	At Yankee Stadium
Oct. 5—Giants (Schumacher).....	5	Yankees (Malone).....	4	At Yankee Stadium (10 inn.)
Oct. 6—Yankees (Gomez).....	13	Giants (Fitzsimmons).....	5	At Polo Grounds

1937—NEW YORK A. L. (4) vs. NEW YORK N. L. (1)

Managers—Joseph V. McCarthy, Yankees; William H. Terry, Giants.

Oct. 6—Yankees (Gomez).....	8	Giants (Hubbell).....	1	At Yankee Stadium
Oct. 7—Yankees (Ruffing).....	8	Giants (Melton).....	1	At Yankee Stadium
Oct. 8—Yankees (Pearson).....	5	Giants (Schumacher).....	1	At Polo Grounds
Oct. 9—Giants (Hubbell).....	7	Yankees (Hadley).....	3	At Polo Grounds
Oct. 10—Yankees (Gomez).....	4	Giants (Melton).....	2	At Polo Grounds

1938—NEW YORK A. L. (4) vs. CHICAGO N. L. (0)

Managers—Joseph V. McCarthy, New York; Charles L. Hartnett, Chicago.

Oct. 5—New York (Ruffing).....	3	Chicago (Lee).....	1	At Chicago
Oct. 6—New York (Gomez).....	6	Chicago (Dean).....	3	At Chicago
Oct. 8—New York (Pearson).....	5	Chicago (Bryant).....	2	At New York
Oct. 9—New York (Ruffing).....	8	Chicago (Lee).....	3	At New York

1939—NEW YORK A. L. (4) vs. CINCINNATI N. L. (0)

Managers—Joseph V. McCarthy, New York; William B. McKechnie, Cincinnati.

Oct. 4—New York (Ruffing).....	2	Cincinnati (Derringer).....	1	At New York
Oct. 5—New York (Pearson).....	4	Cincinnati (Walters).....	0	At New York
Oct. 7—New York (Hadley).....	7	Cincinnati (Thompson).....	3	At Cincinnati
Oct. 8—New York (Murphy).....	7	Cincinnati (Walters).....	4	At Cincinnati (10 inn.)

1940—CINCINNATI N. L. (4) vs. DETROIT A. L. (3)

Managers—William B. McKechnie, Cincinnati; Delmar D. Baker, Detroit.

Oct. 2—Detroit (Newsom).....	7	Cincinnati (Derringer).....	2	At Cincinnati
Oct. 3—Cincinnati (Walters).....	5	Detroit (Rowe).....	3	At Cincinnati
Oct. 4—Detroit (Bridges).....	7	Cincinnati (Turner).....	4	At Detroit
Oct. 5—Cincinnati (Derringer).....	5	Detroit (Trout).....	2	At Detroit
Oct. 6—Detroit (Newsom).....	8	Cincinnati (Thompson).....	0	At Detroit
Oct. 7—Cincinnati (Walters).....	4	Detroit (Rowe).....	0	At Cincinnati
Oct. 8—Cincinnati (Derringer).....	2	Detroit (Newsom).....	1	At Cincinnati

1941—NEW YORK A. L. (4) vs. BROOKLYN N. L. (1)

Managers—Joseph V. McCarthy, New York; Leo E. Durocher, Brooklyn.

Oct. 1—New York (Ruffing).....	3	Brooklyn (Davis).....	2	At New York
Oct. 2—Brooklyn (Wyatt).....	3	New York (Chandler).....	2	At New York
Oct. 4—New York (Russo).....	2	Brooklyn (Casey).....	1	At Brooklyn
Oct. 5—New York (Murphy).....	7	Brooklyn (Casey).....	4	At Brooklyn
Oct. 6—New York (Bonham).....	3	Brooklyn (Wyatt).....	1	At Brooklyn

1942—ST. LOUIS N. L. (4) vs. NEW YORK A. L. (1)

Managers—William H. Southworth, St. Louis; Joseph V. McCarthy, New York.

Sept. 30—New York (Ruffing).....	7	St. Louis (M. Cooper).....	4	At St. Louis
Oct. 1—St. Louis (Beazley).....	4	New York (Bonham).....	3	At St. Louis
Oct. 3—St. Louis (White).....	2	New York (Chandler).....	0	At New York
Oct. 4—St. Louis (Lanier).....	9	New York (Donald).....	6	At New York
Oct. 5—St. Louis (Beazley).....	4	New York (Ruffing).....	2	At New York

1943—NEW YORK A. L. (4) vs. ST. LOUIS N. L. (1)

Managers—Joseph V. McCarthy, New York; William H. Southworth, St. Louis.

Oct. 5—New York (Chandler).....	4	St. Louis (Lanier).....	2	At New York
Oct. 6—St. Louis (M. Cooper).....	4	New York (Bonham).....	3	At New York
Oct. 7—New York (Borowy).....	6	St. Louis (Brazle).....	2	At New York
Oct. 10—New York (Russo).....	5	St. Louis (Brecheen).....	1	At St. Louis
Oct. 11—New York (Chandler).....	2	St. Louis (M. Cooper).....	0	At St. Louis

1944—ST. LOUIS N. L. (4) vs. ST. LOUIS A. L. (2)

Managers—William H. Southworth, Cardinals; J. Luther Sewell, Browns.

Oct. 4—Browns (Galehouse).....	2	Cardinals (M. Cooper).....	1	At Sportsman's Park
Oct. 5—Cardinals (Donnelly).....	3	Browns (Muncief).....	2	At Sportsman's Pk. (11 inn.)
Oct. 6—Browns (Kramer).....	6	Cardinals (Wilks).....	2	At Sportsman's Park
Oct. 7—Cardinals (Brecheen).....	5	Browns (Jakucki).....	1	At Sportsman's Park
Oct. 8—Cardinals (M. Cooper).....	2	Browns (Galehouse).....	0	At Sportsman's Park
Oct. 9—Cardinals (Lanier).....	3	Browns (Potter).....	1	At Sportsman's Park

1945—DETROIT A. L. (4) vs. CHICAGO N. L. (3)

Managers—Stephen F. O'Neill, Detroit; Charles J. Grimm, Chicago.

Oct. 3—Chicago (Borowy).....	9	Detroit (Newhouser).....	0	At Detroit
Oct. 4—Detroit (Trucks).....	4	Chicago (Wyse).....	1	At Detroit
Oct. 5—Chicago (Passeau).....	3	Detroit (Overmire).....	0	At Detroit
Oct. 6—Detroit (Trout).....	4	Chicago (Prim).....	1	At Chicago
Oct. 7—Detroit (Newhouser).....	8	Chicago (Borowy).....	4	At Chicago
Oct. 8—Chicago (Borowy).....	8	Detroit (Trout).....	7	At Chicago (12 inn.)
Oct. 10—Detroit (Newhouser).....	9	Chicago (Borowy).....	3	At Chicago

1946—ST. LOUIS N. L. (4) vs. BOSTON A. L. (3)

Managers—Edwin H. Dyer, St. Louis; Joseph E. Cronin, Boston.

Oct. 6—Boston (Johnson).....	3	St. Louis (Pollet).....	2	At St. Louis (10 innings)
Oct. 7—St. Louis (Brecheen).....	3	Boston (Harris).....	0	At St. Louis
Oct. 9—Boston (Ferriss).....	4	St. Louis (Dickson).....	0	At Boston
Oct. 10—St. Louis (Munger).....	12	Boston (Hughson).....	3	At Boston
Oct. 11—Boston (Dobson).....	6	St. Louis (Brazle).....	3	At Boston
Oct. 13—St. Louis (Brecheen).....	4	Boston (Harris).....	1	At St. Louis
Oct. 15—St. Louis (Brecheen).....	4	Boston (Klinger).....	3	At St. Louis

1947—NEW YORK A. L. (4) vs. BROOKLYN N. L. (3)

Managers—Stanley R. Harris, New York; Burton E. Shotton, Brooklyn.

Sept. 30—New York (Shea).....	5	Brooklyn (Branca).....	3	At New York
Oct. 1—New York (Reynolds).....	10	Brooklyn (Lombardi).....	3	At New York
Oct. 2—Brooklyn (Casey).....	9	New York (Newsom).....	8	At Brooklyn
Oct. 3—Brooklyn (Casey).....	3	New York (Bevens).....	2	At Brooklyn
Oct. 4—New York (Shea).....	2	Brooklyn (Barney).....	1	At Brooklyn
Oct. 5—Brooklyn (Branca).....	8	New York (Page).....	6	At New York
Oct. 6—New York (Page).....	5	Brooklyn (Gregg).....	2	At New York

1948—CLEVELAND A. L. (4) vs. BOSTON N. L. (2)

Managers—Louis Boudreau, Cleveland; William H. Southworth, Boston.

Oct. 6—Boston (Sain).....	1	Cleveland (Feller).....	0	At Boston
Oct. 7—Cleveland (Lemon).....	4	Boston (Spahn).....	1	At Boston
Oct. 8—Cleveland (Bearden).....	2	Boston (Bickford).....	0	At Cleveland
Oct. 9—Cleveland (Gromek).....	2	Boston (Sain).....	1	At Cleveland
Oct. 10—Boston (Spahn).....	11	Cleveland (Feller).....	5	At Cleveland
Oct. 11—Cleveland (Lemon).....	4	Boston (Voiselle).....	3	At Boston

1949—NEW YORK A. L. (4) vs. BROOKLYN N. L. (1)

Managers—Charles D. Stengel, New York; Burton E. Shotton, Brooklyn.

Oct. 5—New York (Reynolds).....	1	Brooklyn (Newcombe).....	0	At New York
Oct. 6—Brooklyn (Roe).....	3	New York (Raschi).....	0	At New York
Oct. 7—New York (Page).....	4	Brooklyn (Branca).....	3	At Brooklyn
Oct. 8—New York (Lopat).....	6	Brooklyn (Newcombe).....	4	At Brooklyn
Oct. 9—New York (Raschi).....	10	Brooklyn (Barney).....	6	At Brooklyn

1950—NEW YORK A. L. (4) vs. PHILADELPHIA N. L. (0)

Managers—Charles D. Stengel, New York; Edwin M. Sawyer, Philadelphia.

Oct. 4—New York (Raschi).....	1	Philadelphia (Konstanty).....	0	At Philadelphia
Oct. 5—New York (Reynolds).....	2	Philadelphia (Roberts).....	1	At Philadelphia (10 inn)
Oct. 6—New York (Ferrick).....	3	Philadelphia (Meyer).....	2	At New York
Oct. 7—New York (Ford).....	5	Philadelphia (Miller).....	2	At New York

1951—NEW YORK A. L. (4) vs. NEW YORK N. L. (2)

Managers—Charles D. Stengel, Yankees; Leo E. Durocher, Giants.

Oct. 4—Giants (Koslo).....	5	Yankees (Reynolds).....	1	At Yankee Stadium
Oct. 5—Yankees (Lopat).....	3	Giants (Jansen).....	1	At Yankee Stadium
Oct. 6—Giants (Hearn).....	6	Yankees (Raschi).....	2	At Polo Grounds
Oct. 8—Yankees (Reynolds).....	6	Giants (Maglie).....	2	At Polo Grounds
Oct. 9—Yankees (Lopat).....	13	Giants (Jansen).....	1	At Polo Grounds
Oct. 10—Yankees (Raschi).....	4	Giants (Koslo).....	3	At Yankee Stadium

1952—NEW YORK A. L. (4) vs. BROOKLYN N. L. (3)

Managers—Charles D. Stengel, New York; Charles W. Dressen, Brooklyn.

Oct. 1—Brooklyn (Black).....	4	New York (Reynolds).....	2	At Brooklyn
Oct. 2—New York (Raschi).....	7	Brooklyn (Erskine).....	1	At Brooklyn
Oct. 3—Brooklyn (Roe).....	5	New York (Lopat).....	3	At New York
Oct. 4—New York (Reynolds).....	2	Brooklyn (Black).....	0	At New York
Oct. 5—Brooklyn (Erskine).....	6	New York (Sain).....	5	At New York (12 inn)
Oct. 6—New York (Raschi).....	3	Brooklyn (Loes).....	2	At Brooklyn
Oct. 7—New York (Reynolds).....	4	Brooklyn (Black).....	2	At Brooklyn

1953—NEW YORK A. L. (4) vs. BROOKLYN N. L. (2)

Managers—Charles D. Stengel, New York; Charles W. Dressen, Brooklyn.

Sept. 30—New York (Sain).....	9	Brooklyn (Labine).....	5	At New York
Oct. 1—New York (Lopat).....	4	Brooklyn (Roe).....	2	At New York
Oct. 2—Brooklyn (Erskine).....	3	New York (Raschi).....	2	At Brooklyn
Oct. 3—Brooklyn (Loes).....	7	New York (Ford).....	3	At Brooklyn
Oct. 4—New York (McDonald).....	11	Brooklyn (Podres).....	7	At Brooklyn
Oct. 5—New York (Reynolds).....	4	Brooklyn (Labine).....	3	At New York

1954—NEW YORK N. L. (4) vs. CLEVELAND A. L. (0)

Managers—Leo E. Durocher, New York; Alfonso R. Lopez, Cleveland.

Sept. 29—New York (Grissom).....	5	Cleveland (Lemon).....	2	At New York
Sept. 30—New York (Antonelli).....	3	Cleveland (Wynn).....	1	At New York
Oct. 1—New York (Gomez).....	6	Cleveland (Garcia).....	2	At Cleveland
Oct. 2—New York (Liddle).....	7	Cleveland (Lemon).....	4	At Cleveland

1955—BROOKLYN N. L. (4) vs. NEW YORK A. L. (3)

Managers—Walter Alston, Brooklyn; Charles D. Stengel, New York.

Sept. 28—New York (Ford).....	6	Brooklyn (Newcombe).....	5	At New York
Sept. 29—New York (Byrne).....	4	Brooklyn (Loes).....	2	At New York
Sept. 30—Brooklyn (Podres).....	8	New York (Turley).....	3	At Brooklyn
Oct. 1—Brooklyn (Labine).....	8	New York (Larsen).....	5	At Brooklyn
Oct. 2—Brooklyn (Craig).....	5	New York (Grim).....	3	At Brooklyn
Oct. 3—New York (Ford).....	5	Brooklyn (Spooner).....	1	At New York
Oct. 4—Brooklyn (Podres).....	2	New York (Byrne).....	0	At New York

1956—NEW YORK A. L. (4) vs. BROOKLYN N. L. (3)

Managers—Charles D. Stengel, New York; Walter Alston, Brooklyn

Oct. 3—Brooklyn (Maglie).....	6	New York (Ford).....	3	at Brooklyn
Oct. 5—Brooklyn (Bessent).....	13	New York (Morgan).....	8	at Brooklyn
Oct. 6—New York (Ford).....	5	Brooklyn (Craig).....	3	at New York
Oct. 7—New York (Sturdivant).....	6	Brooklyn (Erskine).....	2	at New York
Oct. 8—New York (Larsen).....	2	Brooklyn (Maglie).....	0	at New York
Oct. 9—Brooklyn (Labine).....	1	New York (Turley).....	0	at Brooklyn (10 inn)
Oct. 10—New York (Kucks).....	9	Brooklyn (Newcombe).....	0	at Brooklyn

National League Pennant Winners

Year	Club	Manager	Won	Lost	Pct.				
1876	Chicago	Albert G. Spalding	52	14	.788	1915	Brooklyn	Wilbert Robinson	94 60 .610
1877	Boston	Harry Wright	31	17	.646	1917	New York	John J. McGraw	98 56 .636
1878	Boston	Harry Wright	41	19	.683	1918	Chicago	Fred L. Mitchell	84 45 .651
1879	Providence	George Wright	59	25	.702	1919*	Cincinnati	Patrick J. Moran	96 44 .686
1880	Chicago	Adrian C. Anson	67	17	.798	1920	Brooklyn	Wilbert Robinson	93 61 .604
1881	Chicago	Adrian C. Anson	56	28	.667	1921*	New York	John J. McGraw	94 59 .614
1882	Chicago	Adrian C. Anson	55	29	.655	1922*	New York	John J. McGraw	93 61 .604
1883	Boston	John F. Morrill	63	35	.643	1923	New York	John J. McGraw	95 58 .621
1884	Providence	Frank C. Bancroft	84	28	.750	1924	New York	John J. McGraw	93 60 .608
1885	Chicago	Adrian C. Anson	87	25	.777	1925*	Pittsburgh	William B. McKechnie	95 58 .621
1886	Chicago	Adrian C. Anson	90	34	.726	1926*	St. Louis	Rogers Hornsby	89 65 .578
1887	Detroit	W. H. Watkins	79	45	.637	1927	Pittsburgh	Owen J. Bush	94 60 .610
1888	New York	James J. Mutrie	84	47	.641	1928	St. Louis	William B. McKechnie	95 59 .617
1889	New York	James J. Mutrie	83	43	.659	1929	Chicago	Joseph V. McCarthy	94 54 .645
1890	Brooklyn	William H. McGunnigle	86	43	.667	1930	St. Louis	Charles E. Street	92 62 .597
1891	Boston	Frank G. Selee	87	51	.630	1931*	St. Louis	Charles E. Street	101 53 .656
1892	Boston	Frank G. Selee	102	48	.680	1932	Chicago	Charles J. Grimm	90 64 .584
1893	Boston	Frank G. Selee	86	43	.667	1933*	New York	William H. Terry	91 61 .599
1894	Baltimore	Edward H. Hanlon	89	39	.695	1934*	St. Louis	Frank F. Frisch	95 58 .621
1895	Baltimore	Edward H. Hanlon	87	43	.669	1935	Chicago	Charles J. Grimm	100 54 .649
1896	Baltimore	Edward H. Hanlon	90	39	.698	1936	New York	William H. Terry	92 62 .597
1897	Boston	Frank G. Selee	93	39	.705	1937	New York	William H. Terry	95 57 .625
1898	Boston	Frank G. Selee	102	47	.685	1938	Chicago	Charles L. Hartnett	89 63 .586
1899	Brooklyn	Edward H. Hanlon	88	42	.677	1939	Cincinnati	William B. McKechnie	97 57 .630
1900	Brooklyn	Edward H. Hanlon	82	54	.603	1940*	Cincinnati	William B. McKechnie	100 53 .654
1901	Pittsburgh	Fred C. Clarke	90	49	.647	1941	Brooklyn	Leo E. Durocher	100 54 .649
1902	Pittsburgh	Fred C. Clarke	103	36	.741	1942*	St. Louis	William H. Southworth	106 48 .688
1903	Pittsburgh	Fred C. Clarke	91	49	.650	1943	St. Louis	William H. Southworth	105 49 .682
1904	New York	John J. McGraw	106	47	.693	1944*	St. Louis	William H. Southworth	105 49 .682
1905*	New York	John J. McGraw	105	48	.686	1945	Chicago	Charles J. Grimm	98 56 .636
1906	Chicago	Frank L. Chance	116	36	.763	1946*	St. Louis	Edwin H. Dyer	98 58 .628
1907*	Chicago	Frank L. Chance	107	45	.704	1947	Brooklyn	Burton E. Shotton	94 60 .610
1908*	Chicago	Frank L. Chance	99	55	.643	1948	Boston	William H. Southworth	91 62 .595
1909*	Pittsburgh	Fred C. Clarke	110	42	.724	1949	Brooklyn	Burton E. Shotton	97 57 .630
1910	Chicago	Frank L. Chance	104	50	.675	1950	Philadelphia	Edwin M. Sawyer	91 63 .591
1911	New York	John J. McGraw	99	54	.647	1951	New York	Leo E. Durocher	98 59 .624
1912	New York	John J. McGraw	103	48	.682	1952	Brooklyn	Charles W. Dressen	96 57 .627
1913	New York	John J. McGraw	101	51	.664	1953	Brooklyn	Charles W. Dressen	99 52 .656
1914*	Boston	George T. Stallings	94	59	.614	1954*	New York	Leo E. Durocher	97 57 .630
1915	Philadelphia	Patrick J. Moran	90	62	.592	1955*	Brooklyn	Walter Alston	98 55 .641
						1956	Brooklyn	Walter Alston	93 61 .604

* World Series winner.

American League Pennant Winners

1901	Chicago	Clark C. Griffith	83	53	.610	1929*	Philadelphia	Connie Mack	104 46 .693
1902	Philadelphia	Connie Mack	83	53	.610	1930*	Philadelphia	Connie Mack	102 52 .662
1903*	Boston	James J. Collins	91	47	.659	1931	Philadelphia	Connie Mack	107 45 .704
1904	Boston	James J. Collins	95	59	.617	1932*	New York	Joseph V. McCarthy	107 47 .695
1905	Philadelphia	Connie Mack	92	56	.622	1933	Washington	Joseph E. Cronin	99 53 .651
1906*	Chicago	Fielder A. Jones	93	58	.616	1934	Detroit	Gordon S. Cochrane	101 53 .656
1907	Detroit	Hugh A. Jennings	92	58	.613	1935*	Detroit	Gordon S. Cochrane	93 58 .616
1908	Detroit	Hugh A. Jennings	90	63	.588	1936*	New York	Joseph V. McCarthy	102 51 .667
1909	Detroit	Hugh A. Jennings	98	54	.645	1937*	New York	Joseph V. McCarthy	102 52 .662
1910*	Philadelphia	Connie Mack	102	48	.680	1938*	New York	Joseph V. McCarthy	99 53 .651
1911*	Philadelphia	Connie Mack	101	50	.669	1939*	New York	Joseph V. McCarthy	106 45 .702
1912*	Boston	J. Garland Stahl	105	47	.691	1940	Detroit	Delmar D. Baker	90 64 .584
1913*	Philadelphia	Connie Mack	96	57	.627	1941*	New York	Joseph V. McCarthy	101 53 .656
1914	Philadelphia	Connie Mack	99	53	.651	1942	New York	Joseph V. McCarthy	103 51 .669
1915*	Boston	William F. Carrigan	101	50	.669	1943*	New York	Joseph V. McCarthy	98 56 .636
1916*	Boston	William F. Carrigan	91	63	.591	1944	St. Louis	James L. Sewell	89 65 .578
1917*	Chicago	Clarence H. Rowland	100	54	.649	1945*	Detroit	Stephen F. O'Neill	88 65 .575
1918*	Boston	Edward G. Barrow	75	51	.595	1946	Boston	Joseph E. Cronin	104 50 .675
1919	Chicago	William Gleason	88	52	.629	1947*	New York	Stanley R. Harris	97 57 .630
1920*	Cleveland	Tris E. Speaker	98	56	.636	1948*	Cleveland	Louis Boudreau	97 58 .626
1921	New York	Miller J. Huggins	98	55	.641	1949*	New York	Charles D. Stengel	97 57 .630
1922	New York	Miller J. Huggins	94	60	.610	1950*	New York	Charles D. Stengel	98 56 .636
1923*	New York	Miller J. Huggins	98	54	.645	1951*	New York	Charles D. Stengel	98 56 .636
1924*	Washington	Stanley R. Harris	92	62	.597	1952*	New York	Charles D. Stengel	95 59 .617
1925	Washington	Stanley R. Harris	96	55	.636	1953	New York	Charles D. Stengel	105 49 .682
1926	New York	Miller J. Huggins	91	63	.591	1954	Cleveland	Alfonso R. Lopez	111 43 .721
1927*	New York	Miller J. Huggins	110	44	.714	1955	New York	Charles D. Stengel	96 58 .623
1928*	New York	Miller J. Huggins	101	53	.656	1956*	New York	Charles D. Stengel	97 57 .630

* World Series winner.

National League Batting Champions

Year	Avq.	Year	Avq.	Year	Avq.
1876—R. Barnes, Chi.	403	1903—J. P. Wagner, Pitts.	355	1931—C. J. Hefey, St. L.	341
1877—J. L. White, Bos.	385	1904—J. P. Wagner, Pitts.	349	1932—F. J. O'Doul, Bklyn.	363
1878—A. Dalrymple, Mil.	356	1905—J. B. Seymour, Cin.	377	1933—C. H. Klein, Phila.	363
1879—A. C. Anson, Chi.	407	1906—J. P. Wagner, Pitts.	339	1934—P. G. Waner, Pitts.	363
1880—G. F. Gore, Chi.	365	1907—J. P. Wagner, Pitts.	350	1935—F. Vaughan, Pitts.	389
1881—A. C. Anson, Chi.	399	1908—J. P. Wagner, Pitts.	354	1936—P. G. Waner, Pitts.	379
1882—D. Brouthers, Buf.	367	1909—J. P. Wagner, Pitts.	339	1937—J. M. Medwick, St. L.	333
1883—D. Brouthers, Buf.	371	1910—S. N. Magee, Phila.	331	1938—E. N. Lombardi, Cin.	341
1884—J. O'Rourke, Buf.	350	1911—J. P. Wagner, Pitts.	334	1939—J. R. Mize, St. L.	341
1885—R. Connor, N. Y.	371	1912—H. Zimmerman, Chi.	372	1940—D. Garm, Pitts.	353
1886—M. J. Kelly, Chi.	388	1913—J. Daubert, Bklyn.	350	1941—H. P. Reiser, Bklyn.	341
1887—A. C. Anson, Chi.	421	1914—J. Daubert, Bklyn.	329	1942—E. N. Lombardi, Bos.	333
1888—A. C. Anson, Chi.	343	1915—L. Doyle, N. Y.	320	1943—S. F. Musial, St. L.	353
1889—D. Brouthers, Bos.	373	1916—H. Chase, Cin.	339	1944—F. Walker, Bklyn.	353
1890—J. Glascock, N. Y.	336	1917—E. J. Roush, Cin.	341	1945—P. J. Cavarretta, Chicago	353
1891—W. Hamilton, Phila.	338	1918—Z. D. Wheat, Bklyn.	335	1946—S. F. Musial, St. L.	361
1892—C. Childs, Cleve.	335	1919—E. J. Roush, Cin.	321	1947—H. W. Walker, Phila.	361
1892—D. Brouthers, Bklyn.	335	1920—Rogers Hornsby, St. L.	370	1948—S. F. Musial, St. L.	379
1893—Hugh Duffy, Bos.	378	1921—Rogers Hornsby, St. L.	397	1949—J. R. Robinson, Bklyn.	341
1894—Hugh Duffy, Bos.	438	1922—Rogers Hornsby, St. L.	401	1950—S. F. Musial, St. L.	341
1895—J. Burkett, Cleve.	423	1923—Rogers Hornsby, St. L.	384	1951—S. F. Musial, St. L.	353
1896—J. Burkett, Cleve.	410	1924—Rogers Hornsby, St. L.	424	1952—S. F. Musial, St. Louis.	333
1897—W. Keeler, Balt.	432	1925—Rogers Hornsby, St. L.	403	1953—C. A. Furillo, Bklyn.	341
1898—W. Keeler, Balt.	379	1926—Eugene Hargrave, Cin.	353	1954—Willie Mays, N. Y.	341
1899—E. J. Delahanty, Phila.	408	1927—Paul G. Waner, Pitts.	380	1955—R. Ashburn, Phila.	333
1900—J. P. Wagner, Pitts.	380	1928—Rogers Hornsby, Bos.	387	1956—Henry Aaron, Milw.	321
1901—J. Burkett, St. L.	382	1929—Frank J. O'Doul, Phila.	398		
1902—C. H. Beaumont, Pitts.	357	1930—Wm. H. Terry, N. Y.	401		

American League Batting Champions

1901—N. Lajoie, Phila.	422	1920—G. H. Sisler, St. L.	407	1939—J. P. DiMaggio, N. Y.	381
1902—E. J. Delahanty, Wash.	376	1921—H. E. Heilmann, Det.	394	1940—J. P. DiMaggio, N. Y.	353
1903—N. Lajoie, Cleve.	355	1922—G. H. Sisler, St. L.	420	1941—T. S. Williams, Bos.	401
1904—N. Lajoie, Cleve.	381	1923—H. E. Heilmann, Det.	403	1942—T. S. Williams, Bos.	353
1905—Elmer Flick, Cleve.	306	1924—G. H. Ruth, N. Y.	378	1943—L. B. Appling, Chi.	321
1906—G. Stone, St. L.	358	1925—H. E. Heilmann, Det.	393	1944—L. B. Appling, Cleve.	321
1907—T. R. Cobb, Det.	350	1926—H. E. Manush, Det.	378	1945—G. H. Stirnweiss, N. Y.	301
1908—T. R. Cobb, Det.	324	1927—H. E. Heilmann, Det.	398	1946—J. B. Vernon, Wash.	333
1909—T. R. Cobb, Det.	377	1928—L. A. Goslin, Wash.	379	1947—T. S. Williams, Bos.	341
1910—T. R. Cobb, Det.	385	1929—L. A. Fonseca, Cleve.	369	1948—T. S. Williams, Bos.	361
1911—T. R. Cobb, Det.	420	1930—A. H. Simmons, Phila.	381	1949—G. C. Kell, Det.	341
1912—T. R. Cobb, Det.	410	1931—A. H. Simmons, Phila.	390	1950—W. D. Goodman, Bos.	353
1913—T. R. Cobb, Det.	390	1932—D. Alexander, Det.-Bos.	367	1951—Ferris Fain, Phila.	341
1914—T. R. Cobb, Det.	368	1933—J. E. Foxx, Phila.	356	1952—Ferris Fain, Phila.	321
1915—T. R. Cobb, Det.	369	1934—H. L. Gehrig, N. Y.	363	1953—J. B. Vernon, Wash.	333
1916—T. Speaker, Cleve.	386	1935—C. S. Myer, Wash.	349	1954—R. F. Avila, Cleve.	341
1917—T. R. Cobb, Det.	383	1936—L. B. Appling, Chi.	388	1955—A. W. Kline, Det.	341
1918—T. R. Cobb, Det.	382	1937—C. L. Gehringer, Det.	371	1956—Mickey Mantle, N. Y.	353
1919—T. R. Cobb, Det.	384	1938—J. E. Foxx, Bos.	349		

World Series Club Standing
(Through 1956)

	Series	Won	Lost	Pct.
Boston (A)	6	5	1	.833
New York (A)	22	17	5	.773
St. Louis (N)	9	6	3	.667
Cincinnati (N)	3	2	1	.667
Cleveland (A)	3	2	1	.667
Chicago (A)	3	2	1	.667
Philadelphia (A)	8	5	3	.625
Boston (N)	2	1	1	.500
Pittsburgh (N)	4	2	2	.500

New York (N)	14	5	9	.357
Washington (A)	3	1	2	.333
Detroit (A)	7	2	5	.286
Chicago (N)	10	2	8	.200
Brooklyn (N)	9	1	8	.111
St. Louis (A)	1	0	1	.000
Philadelphia (N)	2	0	2	.000

RECAPITULATION

American League	84
National League	11

Indians-Yanks Hold Crowd Mark

An all-time regular-season baseball attendance record was set when 84,587 fans paid to see the Indians take a doubleheader from the New York Yankees, 4-1, 3-2, at Cleveland's Municipal Stadium on Sept. 12,

1954. The 1,976 non-paying spectators increased the figures to 86,563. The fifth game of the 1948 world series, also held in Cleveland, attracted a paid crowd of 86,288, the all-time high in the sport.

National League Home Run Champions

Year	No.	Year	No.	Year	No.
1876 George Hall, Phila. Athletics...	5	1903 James Sheppard, Bklyn.....	9	1931 Chuck Klein, Phila.....	31
1877 George Shaffer, Louisville.....	3	1904 Harry Lumley, Bklyn.....	9	1932 Chuck Klein, Phila., and	28
1878 Paul Hines, Providence.....	4	1905 Fred Odwell, Cin.....	9	Mel Ott, N. Y.....	38
1879 Charles Jones, Bost.....	9	1906 Tim Jordan, Bklyn.....	12	1933 Chuck Klein, Phila.....	28
1880 James O'Rourke, Bost. and		1907 David Brain, Bost.....	10	1934 Mel Ott, N. Y., and	35
Harry Stovey, Worcester.....	6	1908 Tim Jordan, Bklyn.....	12	Rip Collins, St. L.....	35
1881 Dennis Brouthers, Buffalo.....	8	1909 John Murray, N. Y.....	7	1935 Wally Berger, Bost.....	34
1882 George Wood, Det.....	7	1910 Fred Beck, Bost., and		1936 Mel Ott, N. Y.....	33
1883 William Ewing, N. Y.....	10	Frank Schulte, Chi.....	10	1937 Mel Ott, N. Y., and	31
1884 Ed Williamson, Chi.....	27	1911 Frank Schulte, Chi.....	21	Joe Medwick, St. L.....	36
1885 Abner Dalrymple, Chi.....	11	1912 Henry Zimmerman, Chi.....	14	1938 Mel Ott, N. Y.....	28
1886 Arthur Richardson, Det.....	11	1913 Cliff Cravath, Phila.....	19	1939 John Mize, St. L.....	36
1887 Roger Connor, N. Y., and		1914 Cliff Cravath, Phila.....	19	1940 John Mize, St. L.....	40
Wm. O'Brien, Wash.....	17	1915 Cliff Cravath, Phila.....	24	1941 Dolph Camilli, Bklyn.....	34
1888 Roger Connor, N. Y.....	14	1916 Davis Robertson, N. Y., and		1942 Mel Ott, N. Y.....	30
1889 Sam Thompson, Phila.....	20	Fred Williams, Chi.....	12	1943 Bill Nicholson, Chi.....	29
1890 Tom Burns, Bklyn., and		1917 Davis Robertson, N. Y., and		1944 Bill Nicholson, Chi.....	33
Mike Tiernan, N. Y.....	13	Cliff Cravath, Phila.....	12	1945 Tommy Holmes, Bost.....	28
1891 Harry Stovey, Bost., and		1918 Cliff Cravath, Phila.....	8	1946 Ralph Kiner, Pitts.....	23
Mike Tiernan, N. Y.....	16	1919 Cliff Cravath, Phila.....	12	1947 Ralph Kiner, Pitts., and	51
1892 Jim Holliday, Cin.....	13	1920 Cy Williams, Phila.....	15	John Mize, N. Y.....	40
1893 Ed Delehanty, Phila.....	19	1921 George Kelly, N. Y.....	23	1948 Ralph Kiner, Pitts., and	54
1894 Hugh Duffy, Bost., and		1922 Rogers Hornsby, St. L.....	42	John Mize, N. Y.....	47
Robert Lowe, Bost.....	18	1923 Cy Williams, Phila.....	41	1949 Ralph Kiner, Pitts.....	47
1895 Bill Joyce, Wash.....	17	1924 Jacques Fournier, Bklyn.....	27	1950 Ralph Kiner, Pitts.....	42
1896 Ed Delehanty, Phila., and		1925 Rogers Hornsby, St. L.....	39	1951 Ralph Kiner, Pitts.....	42
Sam Thompson, Phila.....	13	1926 Hack Wilson, Chi.....	21	1952 Ralph Kiner, Pitts., and	37
1897 Nap Lajoie, Phila.....	10	1927 Hack Wilson, Chi., and		Hank Sauer, Chi.....	47
1898 James Collins, Bost.....	14	Cy Williams, Phila.....	30	1953 Ed Mathews, Mil.....	49
1899 John Freeman, Wash.....	25	1928 Hack Wilson, Chi., and		1954 Ted Kluszewski, Cin.....	51
1900 Herman Long, Bost.....	12	Jim Bottomley, St. L.....	31	1955 Willie Mays, N. Y.....	43
1901 Sam Crawford, Cin.....	16	1929 Chuck Klein, Phila.....	56	1956 Duke Snider, Bklyn.....	43
1902 Tom Leach, Pitts.....	6	1930 Hack Wilson, Chi.....			

American League Home Run Champions

1901 Nap Lajoie, Phila.....	13	1919 Babe Ruth, Bost.....	29	1937 Joe DiMaggio, N. Y.....	46
1902 Ralph Seybold, Phila.....	16	1920 Babe Ruth, N. Y.....	54	1938 Hank Greenberg, Det.....	58
1903 Buck Freeman, Bost.....	13	1921 Babe Ruth, N. Y.....	59	1939 Jimmy Foxx, Phila.....	35
1904 Harry Davis, Phila.....	10	1922 Ken Williams, St. L.....	39	1940 Hank Greenberg, Det.....	41
1905 Harry Davis, Phila.....	8	1923 Babe Ruth, N. Y.....	41	1941 Ted Williams, Bost.....	37
1906 Harry Davis, Phila.....	12	1924 Babe Ruth, N. Y.....	46	1942 Ted Williams, Bost.....	36
1907 Harry Davis, Phila.....	8	1925 Bob Meusel, N. Y.....	33	1943 Rudy York, Det.....	34
1908 Sam Crawford, Det.....	7	1926 Babe Ruth, N. Y.....	47	1944 Nick Eiten, N. Y.....	22
1909 Ty Cobb, Det.....	9	1927 Babe Ruth, N. Y.....	60	1945 Vern Stephens, St. L.....	24
1910 J. Garland Stahl, Bost.....	10	1928 Babe Ruth, N. Y.....	54	1946 Hank Greenberg, Det.....	44
1911 Franklin Baker, Phila.....	9	1929 Babe Ruth, N. Y.....	46	1947 Ted Williams, Bost.....	32
1912 Franklin Baker, Phila.....	10	1930 Babe Ruth, N. Y.....	49	1948 Joe DiMaggio, N. Y.....	39
1913 Franklin Baker, Phila.....	12	1931 Babe Ruth, N. Y., and		1949 Ted Williams, Bost.....	43
1914 Franklin Baker, Phila., and		Lou Gehrig, N. Y.....	46	1950 Al Rosen, Cleve.....	37
Sam Crawford, Det.....	8	1932 Jimmy Foxx, Phila.....	58	1951 Gus Zernial, Phila.....	33
1915 Robert Roth, Chi.-Cleve.....	7	1933 Jimmy Foxx, Phila.....	48	1952 Larry Doby, Cleve.....	32
1916 Wally Pipp, N. Y.....	12	1934 Lou Gehrig, N. Y.....	49	1953 Al Rosen, Cleve.....	43
1917 Wally Pipp, N. Y.....	9	1935 Jimmy Foxx, Phila., and		1954 Larry Doby, Cleve.....	32
1918 Babe Ruth, Bost., and		Hank Greenberg, Det.....	36	1955 Mickey Mantle, N. Y.....	37
Clarence Walker, Phila.....	11	1936 Lou Gehrig, N. Y.....	49	1956 Mickey Mantle, N. Y.....	52

BABE RUTH'S MAJOR LEAGUE HOME-RUN RECORD

Regular Season			World Series			All-Star Game		
Year	Club	No.	Year	Club	No.	Year	Club	No.
1914 Boston (A).....	0	1926 New York (A).....	25	1915 Boston (A).....	0	1933 American.....	1	
1915 Boston (A).....	4	1927 New York (A).....	60	1916 Boston (A).....	0	1934 American.....	0	
1916 Boston (A).....	3	1928 New York (A).....	54	1918 Boston (A).....	0	Totals		
1917 Boston (A).....	2	1929 New York (A).....	46	1921 New York (A).....	1	Regular season.....	714	
1918 Boston (A).....	11	1930 New York (A).....	49	1922 New York (A).....	0	World Series.....	15	
1919 Boston (A).....	29	1931 New York (A).....	46	1923 New York (A).....	3	All-Star.....	1	
1920 New York (A).....	54	1932 New York (A).....	41	1926 New York (A).....	4			
1921 New York (A).....	59	1933 New York (A).....	34	1927 New York (A).....	2			
1922 New York (A).....	35	1934 New York (A).....	22	1928 New York (A).....	3			
1923 New York (A).....	41	1935 Boston (N).....	6	1932 New York (A).....	2			

Major League Individual All-Time Records

Highest batting average, season—Hugh Duffy, Boston (N), 1894	438	Most 3-base hits, season—J. Owen Wilson Pittsburgh (N), 1912	30
Highest batting average (15 or more years)—Ty Cobb, Detroit and Philadelphia (A), 1905-28	367	Most 2-base hits—Tris E. Speaker, Boston Cleveland, Washington, Philadelphia (A), 1907-28	793
Most years batting over .300—Ty Cobb	23	Most 2-base hits, season—Earl W. Webb Boston (A), 1931	63
Most hits—Ty Cobb	4,191	Most singles—Ty Cobb	3,053
Most hits, season—George Sisler, St. Louis (A), 1920	257	Most singles, season—William Keeler Baltimore (N), 1898	203
Most consecutive hits, game—Wilbert Robinson, Baltimore (N), 1892	7	Most runs—Ty Cobb	2,244
Most successive hits—Frank Higgins, Boston (A), 1938; Walt Dropo, Detroit, 1952	12	Most runs batted in—Babe Ruth	2,208
Most consecutive games batted safely—Joe DiMaggio, New York (A), May 15 to July 16, 1941, inclusive	56	Most runs batted in, season—Hack Wilson Chicago (N), 1930	194
Most long hits—Babe Ruth, Boston and New York (A), Boston (N), 1914-35 (506 2b, 136 3b, 714 home runs)	1,356	Most runs batted in, single game—James L. Bottomley, St. Louis (N) vs. Brooklyn Sept. 16, 1924	13
Most total bases—Ty Cobb	5,863	Most games played—Ty Cobb	3,033
Most total bases, season—Babe Ruth, New York (A), 1921	457	Most consecutive games played—Lou Gehrig, New York (A). Streak started June 1, 1925, and stopped May 2, 1939	2,130
Most total bases, game—Joe Adcock, Milwaukee vs. Brooklyn, July 31, 1954	18	Longest service as player—Eddie Collins Philadelphia and Chicago (A), 1906-30; Bobby Wallace, Cleveland (N), St. Louis (A), St. Louis (N), 1894-1918	25 years
Most home runs—Babe Ruth	714	Most times at bat—Ty Cobb	11,424
Most home runs, season—Babe Ruth, New York (A), 1927	60	Most bases on balls—Babe Ruth	2,058
Most home runs, 1 game—Lowe, Boston (N), 1894; Delahanty, Phila. (N), 1896; Gehrig, N. Y. (A), 1932; Klein, Phila. (N), 1936 (10 innings); Seerey, Chicago (A), 1948 (11 innings); Hodges, Brooklyn, 1950; Adcock, Milwaukee, 1954	4	Most bases on balls, season—Babe Ruth 1923	177
Most 3-base hits—Sam Crawford, Cincinnati (N), 1899-1902; Detroit (A), 1903-17	312	Most bases on balls, game (modern record)—Jimmy Foxx Boston (A), 1938	13

PITCHING

Most games—Cy Young (516 in National League, 390 in American League), 1890-1911	906	Most games won, season (modern record)—Jack Chesbro, New York (A), 1904	41
Most games won—Cy Young, Cleveland (N), 1890-98; St. Louis (N), 1899-1900; Boston (A), 1901-08; Cleveland (A), 1909-11 (part); Boston (N), 1911 (part)	511	Most consecutive games won, season—Tim Keefe, New York (N), 1888; Ruben Marquard, New York (N), 1912	11
Most complete games, season—Jack Chesbro, New York (A), 1904	48	Most shutout games—Walter Johnson Washington (A), 1907-27	111
Most games, season (modern record)—Jim Konstanty, Philadelphia (N), 1950	74	Most shutout games, season—Grover Alexander, Philadelphia (N), 1916	11
Most innings, season—Ed Walsh, Chicago (A), 1908	464	Most consecutive shutout innings—Walter Johnson, 1913	53
Lowest earned-run average, season—Ferdie Schupp, New York (N), 1916	0.90	Most strikeouts—Walter Johnson	3,493
Fewest hits in two consecutive games—John Vander Meer, Cincinnati (N), 1938 (both no-hit games)	0	Most strikeouts, season (modern record)—Bobby Feller, Cleveland (A), 1946	341
		Most strikeouts in 9 innings (1901 to date)—Bobby Feller, Cleveland (A) vs. Detroit Oct. 2, 1938	11

MAJOR LEAGUE STATISTICS

lf—Left-field foul line; cf—center field; rf—right-field foul line. (2)—Indicates double-header scheduled.

American League

Club, nickname and grounds	Distance, feet			Seating capacity	Record attendance	Visiting club	Date
	lf	cf	rf				
Baltimore Orioles—Municipal Stadium	309	425	309	47,778	46,796	New York (2)	May 16, 1954
Boston Red Sox—Fenway Park	315	420	302	34,819	41,766	New York (2)	Aug. 12, 1934
Chicago White Sox—Comiskey Park	352	415	352	46,550	54,215	New York (2)	July 19, 1953
Cleveland Indians—Municipal Stadium	320	410	320	73,811	84,587	New York (2)	Sept. 12, 1954
Detroit Tigers—Briggs Stadium	340	440	325	54,101	58,369	New York (2)	July 20, 1947
Kansas City Athletics—Municipal Stadium	330	421	353	30,611	33,585	New York (2, night)	July 24, 1955
New York Yankees—Yankee Stadium	301	461	296	67,203	81,841	Boston (2)	May 30, 1938
Washington Senators—Griffith Stadium	350	401	320	28,669	35,563	New York (2)	July 4, 1936

National League

Brooklyn Dodgers—Ebbets Field	348	393	297	31,902	41,209	New York (2)	May 30, 1934
Chicago Cubs—Wrigley Field	355	400	353	36,755	46,965	Pittsburgh (2)	May 31, 1948
Cincinnati Redlegs—Crosley Field	328	387	342	29,584	36,961	Pittsburgh (2)	Apr. 27, 1947
Milwaukee Braves—County Stadium	320	402	315	43,768	47,604	Cincinnati (2)	Sept. 3, 1956
New York Giants—Polo Grounds	279	483	257	55,131	60,747	Brooklyn (2)	May 31, 1937
Philadelphia Phillies—Connie Mack Stadium	334	447	329	33,359	40,720	Brooklyn (2)	May 11, 1947
Pittsburgh Pirates—Forbes Field	365	457	300	34,249	44,932	Brooklyn	Sept. 23, 1956
St. Louis Cardinals—Busch Stadium	351	426	310	30,500	45,770	Chicago (2)	July 12, 1931

RECORD OF MAJOR LEAGUE ALL-STAR GAMES

Date	Winning league and pitcher	Runs	Losing league and pitcher	Runs	Where held	Paid attendance	Receipts
July 6, 1933	American (Gomez)	4	National (Hallahan)	2	Chicago (A)	49,200	\$ 51,203.50
July 10, 1934	American (Harder)	9	National (Mungo)	7	New York (N)	48,363	52,982.00*
July 8, 1935	American (Gomez)	4	National (Walker)	1	Cleveland (A)	69,812	82,179.12
July 7, 1936	National (J. Dean)	4	American (Grove)	3	Boston (N)	25,556	24,588.80
July 7, 1937	American (Gomez)	8	National (J. Dean)	3	Washington (A)	31,391	28,475.18
July 6, 1938	National (Vander Meer)	4	American (Gomez)	1	Cincinnati (N)	27,067	38,469.05
July 11, 1939	American (Bridges)	3	National (Lee)	1	New York (A)	62,892	75,701.00
July 9, 1940	National (Derringer)	4	American (Ruffing)	0	St. Louis (N)	32,373	36,723.03
July 8, 1941	American (Smith)	7	National (Passeau)	5	Detroit (A)	54,674	63,267.08
July 6, 1942	American (Chandler)	3	National (M. Cooper)	1	New York (N)	33,694	86,102.98
July 13, 1943	American (Leonard)	5	National (M. Cooper)	3	Philadelphia (A)	31,938	65,674.00†
July 11, 1944	National (Raffensberger)	7	American (Hughson)	1	Pittsburgh (N)	29,589	81,275.00†
July 9, 1946	American (Feller)	12	National (Passeau)	0	Boston (A)	34,906	89,071.00
July 8, 1947	American (Shea)	2	National (Sain)	1	Chicago (N)	41,123	105,314.90
July 13, 1948	American (Raschi)	5	National (Schmitz)	2	St. Louis (A)	34,009	93,447.00
July 12, 1949	American (Trucks)	11	National (Newcombe)	7	Brooklyn (N)	32,577	79,225.07
July 11, 1950	(a) National (Blackwell)	4	American (Gray)	3	Chicago (A)	46,127	126,179.52
July 10, 1951	National (Maglie)	8	American (Lopat)	3	Detroit (A)	52,075	124,294.01
July 8, 1952	National (Rush)	3	American (Lemon)	2	Philadelphia (N)	32,785	108,762.00
July 14, 1953	National (Spahn)	5	American (Reynolds)	1	Cincinnati (N)	30,846	155,654.00
July 13, 1954	American (Stone)	11	National (Conley)	9	Cleveland (A)	68,751	259,204.00
July 12, 1955	(b) National (Conley)	6	American (Sullivan)	5	Milwaukee (N)	45,314	179,545.50
July 10, 1956	National (Friend)	7	American (Pierce)	3	Washington (A)	28,843	105,928.50

* An additional \$5,175 was received for radio rights. † Additional funds were received from other sources. (a) Fourteen innings. (b) Twelve innings.

"ALL-TIME ALL-STAR TEAM"

An "All-Time All-Star Team" was selected in 1957 by The Sporting News. The baseball weekly named 12 men and chose John McGraw as manager. This is the team:

	g	ab	r	h	2b	3b	hr	rbi	ba
1b—George Sisler	2055	8267	1284	2812	425	165	99	1180	.340
2b—Rogers Hornsby	2259	8173	1579	2930	541	168	302	1579	.358
ss—Honus Wagner	2785	10427	1740	3430	651	252	101	....	.329
3b—Jimmy Collins	1718	6792	1057	1999	333	117	63	....	.294
lf—Babe Ruth	2503	8396	2174	2873	506	136	714	2209	.342
cf—Tris Speaker	2789	10208	1881	3515	793	224	115	1559	.344
rf—Ty Cobb	3033	11429	2244	4191	724	297	118	....	.367
c—Mickey Cochrane	1482	5169	1041	1652	333	64	119	832	.320

Pitchers

	g	ip	w	l	pet.	shutouts	hits	strikeouts	bb
Christy Mathewson	634	4779	373	188	.665	83	4195	2505	831
Grover Alexander	696	5189	373	208	.642	90	4864	2198	951
Cy Young	904	....	511	313	.616	76	6926	2819	1209
Walter Johnson	803	5925	415	278	.599	113	4926	2497	1405

MOST VALUABLE PLAYERS

(Baseball Writers' Association selections)

American League

1931—Robert Grove, Philadelphia
1932—James Foxx, Philadelphia
1933—James Foxx, Philadelphia
1934—Gordon Cochrane, Detroit
1935—Henry Greenberg, Detroit
1936—Lou Gehrig, New York
1937—Charles Gehringer, Detroit
1938—James Foxx, Boston
1939—Joe DiMaggio, New York
1940—Henry Greenberg, Detroit
1941—Joe DiMaggio, New York
1942—Joe Gordon, New York
1943—Spurgeon Chandler, N. Y.
1944—Harold Newhouser, Detroit
1945—Harold Newhouser, Detroit
1946—Ted Williams, Boston
1947—Joe DiMaggio, New York

1948—Lou Boudreau, Cleveland
1949—Ted Williams, Boston
1950—Phil Rizzuto, New York
1951—Lawrence Berra, New York
1952—Robert Shantz, Phila.
1953—Al Rosen, Cleveland
1954—Lawrence Berra, New York
1955—Lawrence Berra, New York
1956—Mickey Mantle, New York

National League

1931—Frank Frisch, St. Louis
1932—Charles Klein, Philadelphia
1933—Carl Hubbell, New York
1934—Jerome Dean, St. Louis
1935—Charles Hartnett, Chicago
1936—Carl Hubbell, New York
1937—Joseph Medwick, St. Louis

1938—Ernest Lombardi, Cinc.
1939—William Walters, Cinc.
1940—Frank McCormick, Cinc.
1941—Adolph Camilli, Brooklyn
1942—Morton Cooper, St. Louis
1943—Stanley Musial, St. Louis
1944—Marty Marion, St. Louis
1945—Phil Cavarretta, Chicago
1946—Stanley Musial, St. Louis
1947—Robert Elliott, Boston
1948—Stanley Musial, St. Louis
1949—Jackie Robinson, Brooklyn
1950—Jim Konstanty, Phila.
1951—Roy Campanella, Brooklyn
1952—Henry Sauer, Chicago
1953—Roy Campanella, Brooklyn
1954—Willie Mays, New York
1955—Roy Campanella, Brooklyn
1956—Don Newcombe, Brooklyn

JUNIOR WORLD SERIES

International League vs. American Association

No series 1905, 1908-16, 1918-19, 1935.

Year	Winner	Games		Loser
		W	L	
1904	Buffalo (IL)	2	1	St. Paul
1906*	Buffalo (IL)	3	2	Columbus
1907	Toronto (IL)	4	1	Columbus
1917	Indianapolis (AA)	4	1	Toronto
1920	Baltimore (IL)	5	1	St. Paul
1921	Louisville (AA)	5	3	Baltimore
1922	Baltimore (IL)	5	2	St. Paul
1923	Kansas City (AA)	5	4	Baltimore
1924*	St. Paul (AA)	5	4	Baltimore
1925	Baltimore (IL)	5	3	Louisville
1926	Toronto (IL)	5	0	Louisville
1927	Toledo (AA)	5	1	Buffalo
1928*	Indianapolis (AA)	5	1	Rochester
1929	Kansas City (AA)	5	4	Rochester
1930	Rochester (IL)	5	3	Louisville
1931	Rochester (IL)	5	3	St. Paul
1932	Newark (IL)	4	2	Minneapolis
1933	Columbus (AA)	5	3	Buffalo
1934	Columbus (AA)	5	4	Toronto
1936	Milwaukee (AA)	4	1	Buffalo

* Played tie game.

Year	Winner	Games		Loser
		W	L	
1937	Newark (IL)	4	3	Columbus
1938	Kansas City (AA)	4	3	Newark
1939	Louisville (AA)	4	3	Rochester
1940	Newark (IL)	4	2	Louisville
1941	Columbus (AA)	4	2	Montreal
1942	Columbus (AA)	4	1	Syracuse
1943	Columbus (AA)	4	1	Syracuse
1944	Baltimore (IL)	4	2	Louisville
1945	Louisville (AA)	4	2	Newark
1946	Montreal (IL)	4	2	Louisville
1947	Milwaukee (AA)	4	3	Syracuse
1948	Montreal (IL)	4	1	St. Paul
1949	Indianapolis (AA)	4	2	Montreal
1950	Columbus (AA)	4	1	Baltimore
1951	Milwaukee (AA)	4	2	Montreal
1952	Rochester (IL)	4	3	Kansas City
1953	Montreal (IL)	4	1	Kansas City
1954	Louisville (AA)	4	2	Syracuse
1955	Minneapolis (AA)	4	3	Rochester
1956	Indianapolis (AA)	4	0	Rochester

The First World Series No-Hitter

Don Larsen of the New York Yankees pitched the first no-run no-hit game in World Series history in 1956 and hurled a perfect game in so doing. Facing the Brooklyn Dodgers at the Yankee Stadium

in the fifth game of the series on Oct. 8, Larsen retired 27 batters in a row. The righthander made only 97 pitches. The Yankees won, 2 to 0. The attendance was 64,519. The box score:

BROOKLYN (N)									
	ab	r	h	po	a	e			
Gilliam, 2b.....	3	0	0	2	0	0			
Reese, ss.....	3	0	0	4	2	0			
Snider, cf.....	3	0	0	1	0	0			
Robinson, 3b.....	3	0	0	2	4	0			
Hodges, 1b.....	3	0	0	5	1	0			
Amoros, lf.....	3	0	0	3	0	0			
Furillo, rf.....	3	0	0	0	0	0			
Campanella, c.....	3	0	0	7	2	0			
Maglie, p.....	2	0	0	0	1	0			
aMitchell.....	1	0	0	0	0	0			
Totals.....	27	0	0	24	10	0			

NEW YORK (A)									
	ab	r	h	po	a	e			
Bauer, rf.....	4	0	1	4	0	0			
Collins, 1b.....	4	0	1	7	0	0			
Mantle, cf.....	3	1	1	4	0	0			
Berra, c.....	3	0	0	7	0	0			
Slaughter, lf.....	2	0	0	1	0	0			
Martin, 2b.....	3	0	1	3	4	0			
McDougald, ss.....	2	0	0	0	2	0			
Carey, 3b.....	3	1	1	1	1	0			
Larsen, p.....	2	0	0	0	1	0			
Totals.....	26	2	5	27	8	0			

aCalled out on strikes for Maglie in 9th.

Brooklyn.....	0	0	0	0	0	0	0	0	—0
New York.....	0	0	0	1	0	1	0	0	x—2

Runs batted in—Mantle, Bauer. Home run—Mantle. Sacrifice—Larsen. Double plays—Reese and Hodges; Hodges, Campanella, Robinson, Campanella and Robinson. Left on bases—Brooklyn 0, New York 3. Bases on balls—Off Maglie 2 (Slaughter and McDougald). Struck out—By Larsen 7 (Gilliam, Reese, Hodges, Campanella, Snider, Gilliam, Mitchell), Maglie 5 (Martin, Collins 2, Larsen, Bauer). Runs and earned runs—Off Larsen 0-0, Maglie 2-2. Umpires—Pinelli (N), plate; Soar (A), first base; Boggess (N), second base; Napp (A), third base; Gorman (N), left field; Runge (A), right field. Time of game—2:06.

Brooklyn.....	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boston.....	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Runs batted in—Olson, Boeckel.
Two-base hits—Maranville, Oescher. Three-base hits—Cruise. Stolen bases—Myers, Hood. Sacrifices—Hood, Powell, Cruise, Holke, O'Neil, Boocklyn. Double plays—Olson and Konetchy; Oescher, Holke and Gowdy. Left on bases—Boston 16, Brooklyn 11. Earned runs—Boston 1, Brooklyn 1. Struck out by Cadore 7, Olson 6, Gowdy 3, Oescher 8, Oescher 7, Olson 2, Johnston, Hood, Elliott.
Bases on balls—Off Cadore 5 (Powell 3, Mann, Cruise), Oescher 4 (Wheat, Hood, Konetchy, Krueger). Wild pitch—Cadore. Umpires—McCormick and Hart. Time—3:50. Attendance—2,000.

GOLF

IT MAY BE that golf originated in Holland—historians believe it did—but certainly Scotland fostered the game and is famous for it. In fact, in 1457 the Scottish Parliament, disturbed because football and golf had lured young Scots from the more soldierly exercise of archery, passed an ordinance that “futeball and golf be utterly cryit down and nocht usit”. James I and Charles I of the royal line of Stuarts were golf enthusiasts, whereby the game came to be known as “the royal and ancient game of golf”.

The golf balls used in the early games were leather covered and stuffed with feathers. Clubs of all kinds were fashioned by hand to suit individual players. The great step in spreading the game came with the change from the feather ball to the gutta-percha ball about 1850, and in 1860 formal competition began with the establishment of an annual tournament for the British open championship. There are records of “golf clubs” in the United

States as far back as colonial days but no proof of actual play before John Reid and some friends laid out six holes on the Reid lawn in Yonkers, N. Y., in 1888 and played there with the golf balls and clubs brought over from Scotland by Robert Lockhart. This group then formed the St. Andrews Golf Club of Yonkers, and golf was established in this country.

However, it remained a rather sedate and almost aristocratic pastime until a 20-year-old ex-caddy, Francis Ouimet of Boston, defeated two great British professionals, Harry Vardon and Ted Ray, in the United States Open championship at Brookline, Mass., in 1913. This feat put the game and Francis Ouimet on the front pages of the newspapers and stirred a wave of enthusiasm for the sport. The greatest feat so far in golf history was that of Robert Tyre Jones, Jr. of Atlanta, Ga., in winning the British Open, the British Amateur, the U. S. Open and the U. S. Amateur titles in one year, 1930.

Golf Statistics

Source: United States Golf Association.

UNITED STATES OPEN CHAMPIONS

Year	Winner	Score	Where played	Year	Winner	Score	Where played
1895	Horace Rawlins.....	173	Newport	1925	W. Macfarlane (a).....	291	Worcester
1896	James Foulis.....	152	Shinnecock Hills	1926	R. T. Jones, Jr.(b).....	293	Scioto
1897	Joe Lloyd.....	162	Chicago	1927	Tommy Armour (a).....	301	Oakmont
1898*	Fred Herd.....	328	Myopia	1928	Johnny Farrell (a).....	294	Olympia Fields
1899	Willie Smith.....	315	Baltimore	1929	R. T. Jones, Jr.(a,b).....	294	Winged Foot
1900	Harry Vardon.....	313	Chicago	1930	R. T. Jones, Jr.(b).....	287	Interlachen
1901	Willie Anderson (a).....	331	Myopia	1931	Billy Burke (a).....	292	Inverness
1902	L. Auchterlonie.....	307	Garden City	1932	Gene Sarazen.....	286	Fresh Meadow
1903	Willie Anderson (a).....	307	Baltusrol	1933	John Goodman (b).....	287	North Shore
1904	Willie Anderson.....	303	Glen View	1934	Olin Dutra.....	293	Merion
1905	Willie Anderson.....	314	Myopia	1935	Sam Parks, Jr.....	299	Oakmont
1906	Alex Smith.....	295	Onwentsia	1936	Tony Manero.....	282	Baltusrol
1907	Alex Ross.....	302	Philadelphia	1937	Ralph Guldahl.....	281	Oakland Hills
1908	Fred McLeod (a).....	322	Myopia	1938	Ralph Guldahl.....	284	Cherry Hills
1909	George Sargent.....	290	Englewood	1939	Byron Nelson (a).....	284	Philadelphia
1910	Alex Smith (a).....	298	Philadelphia	1940	W. Lawson Little, Jr.(a)...	287	Canterbury
1911	J. J. McDermott (a).....	307	Chicago	1941	Craig Wood.....	284	Colonial
1912	J. J. McDermott.....	294	Buffalo	1942-45	No tournaments†		
1913	Francis Ouimet (a,b).....	304	Brookline	1946	Lloyd Mangrum (a).....	284	Canterbury
1914	Walter Hagen.....	290	Midlothian	1947	Lew Worsham (a).....	282	St. Louis
1915	Jerome D. Travers (b).....	297	Baltusrol	1948	Ben Hogan.....	276	Riviera
1916	Charles Evans, Jr.(b)....	286	Minikahda	1949	Cary Middlecoff.....	286	Medinah
1917-18	No tournaments†			1950	Ben Hogan (a).....	287	Merion
1919	Walter Hagen (a).....	301	Brae Burn	1951	Ben Hogan.....	287	Oakland Hills
1920	Edward Ray.....	295	Inverness	1952	Julius Boros.....	281	Northwood
1921	James M. Barnes.....	289	Columbia	1953	Ben Hogan.....	283	Oakmont
1922	Gene Sarazen.....	288	Skokie	1954	Ed Fuqua.....	284	Baltusrol
1923	R. T. Jones, Jr.(a,b).....	296	Inwood	1955	Jack Fleck (a).....	287	Olympic
1924	Cyril Walker.....	297	Oakland Hills	1956	Cary Middlecoff.....	281	Oak Hill

(a) Won play-off. (b) Amateur. * In 1898 competition was extended to 72 holes. † In 1917, Jock Hutchison, with a 292, won an Open Patriotic Tournament for the benefit of the American Red Cross at Whitemarsh Valley Country Club. ‡ In 1942, Ben Hogan, with a 271, won a Hale American National Open Tournament for the benefit of the Navy Relief Society and USO at Ridgemoor Country Club.

UNITED STATES AMATEUR CHAMPIONS

Year	Winner	Where played	Year	Winner	Where played
1895	Charles B. Macdonald.....	Newport	1925	R. T. Jones, Jr.....	Oakmont
1896	H. J. Whigham.....	Shinnecock Hills	1926	George Von Elm.....	Baltusrol
1897	H. J. Whigham.....	Chicago	1927	R. T. Jones, Jr.....	Minikahda
1898	Findlay S. Douglas.....	Morris County	1928	R. T. Jones, Jr.....	Brae Burn
1899	H. M. Harriman.....	Onwentsia	1929	H. R. Johnston.....	Del Monte
1900	Walter J. Travis.....	Garden City	1930	R. T. Jones, Jr.....	Merion
1901	Walter J. Travis.....	Atlantic City	1931	Francis Ouimet.....	Beverly
1902	Louis N. James.....	Glen View	1932	C. R. Somerville.....	Baltimore
1903	Walter J. Travis.....	Nassau	1933	G. T. Dunlap, Jr.....	Kenwood
1904	H. Chandler Egan.....	Baltusrol	1934	W. Lawson Little, Jr.....	Brookline
1905	H. Chandler Egan.....	Chicago	1935	W. Lawson Little, Jr.....	Cleveland
1906	Eben M. Byers.....	Englewood	1936	John W. Fischer.....	Garden City
1907	Jerome D. Travers.....	Euclid	1937	John Goodman.....	Alderwood
1908	Jerome D. Travers.....	Garden City	1938	Willie Turnesa.....	Oakmont
1909	Robert A. Gardner.....	Chicago	1939	Marvin H. Ward.....	North Shore
1910	W. C. Fownes, Jr.....	Brookline	1940	R. D. Chapman.....	Winged Foot
1911	Harold H. Hilton.....	Apawamis	1941	Marvin H. Ward.....	Omaha
1912	Jerome D. Travers.....	Chicago	1946	Ted Bishop.....	Baltusrol
1913	Jerome D. Travers.....	Garden City	1947	Robert Riegel.....	Del Monte
1914	Francis Ouimet.....	Ekwano	1948	Willie Turnesa.....	Memphis
1915	Robert A. Gardner.....	Detroit	1949	Charles Coe.....	Oak Hill
1916	Charles Evans, Jr.....	Merion	1950	Sam Urzetta.....	Minneapolis
1919	S. D. Herron.....	Oakmont	1951	Billy Maxwell.....	Saucon Valley
1920	Charles Evans, Jr.....	Engineers'	1952	Jack Westland.....	Seattle
1921	Jesse P. Guilford.....	St. Louis	1953	Gene Littler.....	Okl. City
1922	Jess W. Sweetser.....	Brookline	1954	Arnold Palmer.....	Detroit
1923	Max R. Marston.....	Flossmoor	1955	Harvie Ward.....	Richmond
1924	R. T. Jones, Jr.....	Merion	1956	Harvie Ward.....	Lake Forest

UNITED STATES WOMEN AMATEUR CHAMPIONS

1895	Mrs. C. S. Brown.....	Meadow Brook	1925	Glenna Collett.....	St. Louis
1896	Beatrice Hoyt.....	Morris County	1926	Mrs. G. H. Stetson.....	Merion
1897	Beatrice Hoyt.....	Essex (Mass.)	1927	Mrs. M. B. Horn.....	Cherry Valley
1898	Beatrice Hoyt.....	Ardsley	1928	Glenna Collett.....	Hot Springs (Va.)
1899	Ruth Underhill.....	Philadelphia	1929	Glenna Collett.....	Oakland Hills
1900	Frances C. Griscom.....	Shinnecock Hills	1930	Glenna Collett.....	Los Angeles
1901	Genevieve Hecker.....	Baltusrol	1931	Helen Hicks.....	Buffalo
1902	Genevieve Hecker.....	Brookline	1932	Virginia Van Wie.....	Salem
1903	Bessie Anthony.....	Chicago	1933	Virginia Van Wie.....	Exmoor
1904	G. M. Bishop.....	Merion	1934	Virginia Van Wie.....	Whitemarsh Valley
1905	Pauline Mackay.....	Morris County	1935	Mrs. E. H. Vare, Jr.....	Interlachen
1906	Harriot S. Curtis.....	Brae Burn	1936	Pamela Barton.....	Canoe Brook
1907	Margaret Curtis.....	Midlothian	1937	Mrs. J. A. Page, Jr.....	Memphis
1908	K. C. Harley.....	Chevy Chase	1938	Patty Berg.....	Westmoreland
1909	D. I. Campbell.....	Merion	1939	Betty Jameson.....	Wee Burn
1910	D. I. Campbell.....	Homewood	1940	Betty Jameson.....	Del Monte
1911	Margaret Curtis.....	Baltusrol	1941	Mrs. Frank Newell.....	Brookline
1912	Margaret Curtis.....	Essex (Mass.)	1946	Mrs. M. D. Zaharias.....	Tulsa
1913	Gladys Ravenscroft.....	Wilmington	1947	Louise Suggs.....	Franklin Hills
1914	Mrs. H. A. Jackson.....	Nassau	1948	Grace Lenczyk.....	Pebble Beach
1915	Mrs. C. H. Vanderbeck.....	Onwentsia	1949	Mrs. D. G. Porter.....	Merion
1916	Alexa Stirling.....	Belmont Springs	1950	Beverly Hanson.....	East Lake
1919	Alexa Stirling.....	Shawnee	1951	Dorothy Kirby.....	Town and Country
1920	Alexa Stirling.....	Mayfield	1952	Mrs. Jacqueline Pung.....	Waverley
1921	Marion Hollins.....	Hollywood (N. J.)	1953	Mary Lena Faulk.....	Rhode Island
1922	Glenna Collett.....	Greenbrier	1954	Barbara Romack.....	Sewickley
1923	Edith Cummings.....	Westchester-Biltmore	1955	Patricia Lesser.....	Myers Park
1924	Mrs. D. C. Hurd.....	Rhode Island	1956	Marlene Stewart.....	Meridian Hills

WOMEN'S NATIONAL OPEN CHAMPIONS

1946—Patty Berg (match play).....	—	1952—Louise Suggs.....	284
1947—Betty Jameson.....	295	1953—Betsy Rawls.....	302
1948—Mrs. Mildred D. Zaharias.....	300	1954—Mrs. Mildred D. Zaharias.....	291
1949—Louise Suggs.....	291	1955—Fay Crocker.....	299
1950—Mrs. Mildred D. Zaharias.....	291	1956—Mrs. Katherine Cornelius.....	302
1951—Betsy Rawls.....	293		

UNITED STATES P. G. A. CHAMPIONS

Year	Winner	Where played	1937	Denny Shute.....	Pittsburgh, Pa.
1916	Jim Barnes.....	Siwanoy, N. Y.	1938	Paul Runyan.....	Shawnee-on-Delaware, Pa.
1919	Jim Barnes.....	Engineers, L. I.	1939	Henry Picard.....	Pomonok, L. I.
1920	Jock Hutchison.....	Flossmoor, Ill.	1940	Byron Nelson.....	Hershey, Pa.
1921	Walter Hagen.....	Inwood, L. I.	1941	Victor Ghezzi.....	Denver, Colo.
1922	Gene Sarazen.....	Oakmont, Pa.	1942	Sam Snead.....	Atlantic City, N. J.
1923	Gene Sarazen.....	Pelham, N. Y.	1944	Bob Hamilton.....	Spokane, Wash.
1924	Walter Hagen.....	French Lick, Ind.	1945	Byron Nelson.....	Dayton, Ohio
1925	Walter Hagen.....	Olympia Fields, Ill.	1946	Ben Hogan.....	Portland, Oreg.
1926	Walter Hagen.....	Salisbury, L. I.	1947	Jim Ferrier.....	Plum Hollow, Mich.
1927	Walter Hagen.....	Dallas, Texas	1948	Ben Hogan.....	St. Louis, Mo.
1928	Leo Diegel.....	Baltimore, Md.	1949	Sam Snead.....	Richmond, Va.
1929	Leo Diegel.....	Hillcrest, Calif.	1950	Chandler Harper.....	Columbus, Ohio
1930	Tommy Armour.....	Fresh Meadow, L. I.	1951	Sam Snead.....	Oakmont, Pa.
1931	Tom Creavy.....	Wannamoisset, R. I.	1952	Jim Turnesa.....	Louisville, Ky.
1932	Olin Dutra.....	Keller Course, Minn.	1953	Walter Burkemo.....	Birmingham, Mich.
1933	Gene Sarazen.....	Blue Mound, Wis.	1954	Chick Harbert.....	Keller Course
1934	Paul Runyan.....	Park Club, Buffalo	1955	Doug Ford.....	Meadowbrook
1935	Johnny Revolta.....	Twin Hills, Okla.	1956	Jack Burke, Jr.....	Canton, Mass.
1936	Denny Shute.....	Pinehurst, N. C.			

BRITISH OPEN CHAMPIONS

Year	Winner	Score	Where played	1903	Harry Vardon.....	300	Prestwick
1860	W. Park.....	174	Prestwick	1904	Jack White.....	296	Sandwich
1861	Tom Morris, Sr.....	163	Prestwick	1905	James Braid.....	318	St. Andrews
1862	Tom Morris, Sr.....	163	Prestwick	1906	James Braid.....	300	Muirfield
1863	W. Park.....	168	Prestwick	1907	Arnaud Massy.....	312	Hoylake
1864	Tom Morris, Sr.....	167	Prestwick	1908	James Braid.....	291	Prestwick
1865	A. L. Strath.....	162	Prestwick	1909	J. H. Taylor.....	295	Deal
1866	W. Park.....	169	Prestwick	1910	James Braid.....	299	St. Andrews
1867	Tom Morris, Sr.....	170	Prestwick	1911	Harry Vardon (a).....	303	Sandwich
1868	Tom Morris, Jr.....	170	Prestwick	1912	E. Ray.....	295	Muirfield
1869	Tom Morris, Jr.....	154	Prestwick	1913	J. H. Taylor.....	304	Hoylake
1870	Tom Morris, Jr.....	149	Prestwick	1914	Harry Vardon.....	306	Prestwick
1872	Tom Morris, Jr.....	166	Prestwick	1920	George Duncan.....	303	Deal
1873	Tom Kidd.....	179	St. Andrews	1921	Jock Hutchison (a).....	296	St. Andrews
1874	Mungo Park.....	159	Musselburgh	1922	Walter Hagen.....	300	Sandwich
1875	Willie Park.....	166	Prestwick	1923	A. G. Havers.....	295	Troon
1876	Bob Martin.....	176	St. Andrews	1924	Walter Hagen.....	301	Hoylake
1877	Jamie Anderson.....	160	Musselburgh	1925	Jim Barnes.....	300	Prestwick
1878	Jamie Anderson.....	157	Prestwick	1926	R. T. Jones, Jr.....	291	Royal Lytham, St. Annes
1879	Jamie Anderson.....	170	St. Andrews	1927	R. T. Jones, Jr.....	285	St. Andrews
1880	Bob Ferguson.....	162	Musselburgh	1928	Walter Hagen.....	292	Sandwich
1881	Bob Ferguson.....	170	Prestwick	1929	Walter Hagen.....	292	Muirfield
1882	Bob Ferguson.....	171	St. Andrews	1930	R. T. Jones, Jr.....	291	Hoylake
1883	W. L. Fernie (a).....	159	Musselburgh	1931	T. D. Armour.....	296	Carnoustie
1884	Jack Simpson.....	160	Prestwick	1932	G. Sarazen.....	283	Princes, Sandwich
1885	Bob Martin.....	171	St. Andrews	1933	D. Shute (a).....	292	St. Andrews
1886	D. L. Brown.....	157	Musselburgh	1934	T. H. Cotton.....	283	Sandwich
1887	W. Park, Jr.....	161	Prestwick	1935	A. Perry.....	283	Muirfield
1888	Jack Burns.....	171	St. Andrews	1936	A. H. Padgham.....	287	Royal Liverpool
1889	W. Park, Jr.(a).....	155	Musselburgh	1937	T. H. Cotton.....	290	Carnoustie
1890	John Ball.....	164	Prestwick	1938	R. A. Whitcombe.....	295	Sandwich
1891	Hugh Kirkaldy.....	166	St. Andrews	1939	R. Burton.....	290	St. Andrews
1892	H. H. Hilton.....	305	Muirfield	1946	Sam Snead.....	290	St. Andrews
1893	W. Auchterlonie.....	322	Prestwick	1947	Fred Daly.....	293	Hoylake
1894	J. H. Taylor.....	326	Sandwich	1948	Henry Cotton.....	284	Gullane, Muirfield
1895	J. H. Taylor.....	322	St. Andrews	1949	Bobby Locke (a).....	283	Sandwich, Deal
1896	Harry Vardon (a).....	316	Muirfield	1950	Bobby Locke.....	279	Troon, Lochgreen
1897	H. H. Hilton.....	314	Hoylake	1951	Max Faulkner.....	285	Portrush
1898	Harry Vardon.....	307	Prestwick	1952	Bobby Locke.....	287	Royal Lytham, St. Annes
1899	Harry Vardon.....	310	Sandwich	1953	Ben Hogan.....	282	Carnoustie
1900	J. H. Taylor.....	309	St. Andrews	1954	Peter Thomson.....	283	Southport
1901	James Braid.....	309	Muirfield	1955	Peter Thomson.....	281	St. Andrews
1902	Alex Herd.....	307	Hoylake	1956	Peter Thomson.....	286	Hoylake

(a) Won play-off. * In 1892 competition was extended to 72 holes.

BRITISH AMATEUR CHAMPIONS

Year	Winner	Where played	Year	Winner	Where played
1885	A. F. MacFie	Hoylake	1921	W. I. Hunter	Hoylake
1886	H. G. Hutchinson	St. Andrews	1922	E. W. E. Holderness	Prestwick
1887	H. G. Hutchinson	Hoylake	1923	R. H. Wethered	Deal
1888	John Ball	Prestwick	1924	E. W. E. Holderness	St. Andrews
1889	J. E. Laidlay	St. Andrews	1925	Robert Harris	Westward Ho
1890	John Ball	Hoylake	1926	Jess W. Sweetser	Muirfield
1891	J. E. Laidlay	St. Andrews	1927	Dr. W. Tweddell	Hoylake
1892	John Ball	Sandwich	1928	T. P. Perkins	Prestwick
1893	Peter L. Anderson	Prestwick	1929	C. J. H. Tolley	Sandwich
1894	John Ball	Hoylake	1930	R. T. Jones, Jr.	St. Andrews
1895	L. M. B. Melville	St. Andrews	1931	E. Martin Smith	Westward Ho
1896	F. G. Tait	Sandwich	1932	J. De Forest	Muirfield
1897	A. J. T. Allan	Muirfield	1933	Hon. M. Scott	Hoylake
1898	F. G. Tait	Hoylake	1934	W. Lawson Little, Jr.	Prestwick
1899	John Ball	Prestwick	1935	W. Lawson Little, Jr.	Royal Lytham, St. Annes
1900	H. H. Hilton	Sandwich	1936	H. Thomson	St. Andrews
1901	H. H. Hilton	St. Andrews	1937	R. Sweeney, Jr.	Sandwich
1902	C. Hutchings	Hoylake	1938	C. R. Yates	Troon
1903	R. Maxwell	Muirfield	1939	A. Kyle	Hoylake
1904	W. J. Travis	Sandwich	1946	J. Bruen	Birkdale
1905	A. G. Barry	Prestwick	1947	Willie Turnesa	Carnoustie
1906	James Robb	Hoylake	1948	Frank Stranahan	Sandwich
1907	John Ball	St. Andrews	1949	Max McCready	Portmarnock
1908	E. A. Lassen	Sandwich	1950	Frank Stranahan	St. Andrews
1909	R. Maxwell	Muirfield	1951	Richard D. Chapman	Porthcawl
1910	John Ball	Hoylake	1952	Harvie Ward	Prestwick
1911	H. H. Hilton	Prestwick	1953	Joe Carr	Hoylake
1912	John Ball	Westward Ho	1954	Doug Bachli	Gullane
1913	H. H. Hilton	St. Andrews	1955	Lt. Joe Conrad	Royal Lytham, St. Annes
1914	J. L. C. Jenkins	Sandwich	1956	John Beharrell	Troon
1920	Cyril J. H. Tolley	Muirfield			

Intercollegiate Golf Association of America Champions

Year	Individual	Team	Year	Individual	Team
1897	Louis P. Bayard, Jr., Princeton	Yale	1917-18	No tournaments	
1898*	John Reid, Jr., Yale	Harvard	1919	A. L. Walker, Jr., Columbia	Princeton
	James F. Curtis, Harvard	Yale	1920	Jess W. Sweetser, Yale	Princeton
1899	Percy Pyne, 2d, Princeton	Harvard	1921	J. Simpson Dean, Princeton	Dartmouth
1900	No tournament		1922	Pollack Boyd, Dartmouth	Princeton
1901	H. Lindsley, Harvard	Harvard	1923	Dexter Cummings, Yale	Princeton
1902*	Charles Hitchcock, Jr., Yale	Yale	1924	Dexter Cummings, Yale	Yale
	H. Chandler Egan, Harvard	Harvard	1925	G. Fred Lamprecht, Tulane	Yale
1903	F. O. Reinhardt, Princeton	Harvard	1926	G. Fred Lamprecht, Tulane	Yale
1904	A. L. White, Harvard	Harvard	1927	Watts Gunn, Georgia Tech.	Princeton
1905	Robert Abbott, Yale	Yale	1928	M. J. McCarthy, Jr., Georgetown	Princeton
1906	W. E. Clow, Jr., Yale	Yale	1929	Tom Aycock, Yale	Princeton
1907	Ellis Knowles, Yale	Yale	1930	George T. Dunlap, Jr., Princeton	Princeton
1908	H. H. Wilder, Harvard	Yale	1931	George T. Dunlap, Jr., Princeton	Yale
1909	Albert Seckel, Princeton	Yale	1932	John W. Fischer, Jr., Michigan	Yale
1910	Robert E. Hunter, Yale	Yale	1933	Walter Emery, Oklahoma	Yale
1911	George C. Stanley, Yale	Yale	1934	Charles R. Yates, Georgia Tech.	Michigan
1912	F. C. Davison, Harvard	Yale	1935	Ed White, U. of Texas	Michigan
1913	Nathaniel Wheeler, Yale	Yale	1936	Charles Kocsis, Michigan	Yale
1914	Edward P. Allis, 3d, Harvard	Princeton	1937	Fred Haas, Jr., L. S. U.	Princeton
1915	Francis R. Blossom, Yale	Yale	1938	John P. Burke, Georgetown	Stanford
1916	J. W. Hubbell, Harvard	Princeton			

* Two tournaments, in spring and fall.

National Collegiate Champions

Year	Individual	Team	Year	Individual	Team
1939	Vincent D'Antoni, Tulane	Stanford	1947	Dave Barclay, Michigan	L. S. U.
1940	F. Dixon Brooke, Virginia	Princeton*	1948	Bobby Harris, San Jose St.	San Jose St.
1941	Earl Stewart, L. S. U.	Stanford	1949	Harvie Ward, North Carolina	No. Tex. St.
1942	Frank Tatum, Jr., Stanford	Stanford*	1950	Fred Wampler, Purdue	No. Tex. St.
		L. S. U.*	1951	Tom Nieporte, Ohio State	No. Tex. St.
1943	Wallace Ulrich, Carleton	Yale	1952	Jim Vickers, Oklahoma	No. Tex. St.
1944	Louis Lick, Minnesota	Notre Dame	1953	Earl Moeller, Okla. A. & M.	Stanford
1945	John Lorms, Ohio State	Ohio State	1954	Hillman Robbins, Jr., Memphis St.	S. M. U.
1946	George Hamer, Georgia	Stanford	1955	Joe Campbell, Purdue	L. S. U.
			1956	Rick Jones, Ohio State	Houston

* Tie.

Walker Cup Record

MEN (AMATEUR)

Year	Where played
*1921 United States 9, Great Britain 3...	Hoyleake
1922 United States 8, Great Britain 4...	Southampton
1923 United States 6, Great Britain 5...	St. Andrews,
One match halved	Scotland
1924 United States 9, Great Britain 3...	Garden City G. C.
1926 United States 6, Great Britain 5...	St. Andrews,
One match halved	Scotland
1928 United States 11, Great Britain 1...	Wheaton, Ill.
1930 United States 10, Great Britain 2...	Royal St. George's
1932 United States 8, Great Britain 1...	The Country Club,
Three matches halved	Brookline, Mass.
1934 United States 9, Great Britain 2...	St. Andrews,
One match halved	Scotland
1936 United States 9, Great Britain 0...	Pine Valley G. C.,
Three matches halved	Clementon, N. J.
1938 Great Britain 7, United States 4...	St. Andrews,
One match halved	Scotland
1947 United States 8, Great Britain 4...	St. Andrews
1949 United States 10, Great Britain 2...	Winged Foot
1951 United States 6, Great Britain 3...	Southport
1953 United States 9, Great Britain 3...	Kittansett
1955 United States 10, Great Britain 2...	St. Andrews

* Informal match.

Ryder Cup Record

MEN (PROFESSIONAL)

Year	Where played
*1926 Great Britain 13½, United States 1½	Wentworth
1927 United States 9½, Great Britain 2½...	Worcester C. C.
1929 Great Britain 7, United States 5.....	Moortown, Eng.
1931 United States 9, Great Britain 3.....	Scioto C. C.
1933 Great Britain 6½, United States 5½...	Southport, Eng.
1935 United States 9, Great Britain 3.....	Ridgewood C. C.
1937 United States 8, Great Britain 4.....	Southport, Eng.
1947 United States 11, Great Britain 1.....	Portland, Oreg.
1949 United States 7, Great Britain 5.....	Ganton, Eng.
1951 United States 9½, Great Britain 2½...	Pinehurst, N. C.
1953 United States 6½, Great Britain 5½...	Wentworth
1955 United States 8, Great Britain 4.....	Palm Springs

* Informal match.

Curtis Cup Record

WOMEN

Year	Where played
*1930 Great Britain 8, United States 6.....	Sunningdale
1932 United States 5½, Great Britain 3½...	Wentworth, Eng.
1934 United States 6½, Great Britain 2½...	Chevy Chase
1936 United States 4½, Great Britain 4½...	Gleneagles
1938 United States 5½, Great Britain 3½...	Essex C. C.
1948 United States 6½, Great Britain 2½...	Birkdale
1950 United States 7½, Great Britain 1½...	Buffalo
1952 Great Britain 5, United States 4.....	Muirfield
1954 United States 6, Great Britain 3.....	Merion
1956 Great Britain 5, United States 4.....	Sandwich

* Informal match.

SOFTBALL

Source: Amateur Softball Association.

World Amateur Champions

1933—J. L. Gillis, Chicago, Ill.
1934—Ke-Nash-A's, Kenosha, Wis.
1935—Crimson Coaches, Toledo, Ohio
1936—Kodak Park, Rochester, N. Y.
1937—Briggs Mfg. Co., Detroit, Mich.
1938—Pohlers, Cincinnati, Ohio
1939—Carr's, Covington, Ky.
1940—Kodak Park, Rochester, N. Y.
1941—Bendix Brakes, South Bend, Ind.
1942—Deep Rock Oilers, Tulsa, Okla.
1943—Hammer Field, Fresno, Calif.
1944—Hammer Field, Fresno, Calif.
1945—Zollners, Fort Wayne, Ind.
1946—Zollners, Fort Wayne, Ind.
1947—Zollners, Fort Wayne, Ind.
1948—Briggs Beautyware, Detroit, Mich.
1949—Tip Top Tailors, Toronto, Ontario
1950—Clearwater (Fla.) Bombers
1951—Dow Chemical Co., Midland, Mich.
1952—Briggs Beautyware, Detroit, Mich.
1953—Briggs Beautyware, Detroit, Mich.
1954—Clearwater (Fla.) Bombers
1955—Raybestos Cardinals, Stratford, Conn.
1956—Clearwater (Fla.) Bombers

WOMEN

1933—Great Northerns, Chicago, Ill.
1934—Hart Motors, Chicago, Ill.
1935—Bloomer Girls, Cleveland, Ohio
1936-37—National Mfg. Co., Cleveland
1938—J. J. Kreig's, Alameda, Calif.
1939—J. J. Kreig's, Alameda, Calif.
1940—Arizona Ramblers, Phoenix
1941—Higgins Midgets, Tulsa, Okla.
1942—Jax Maids, New Orleans, La.
1943—Jax Maids, New Orleans, La.
1944—Lind & Pomeroy, Portland, Ore.
1945—Jax Maids, New Orleans, La.
1946—Jax Maids, New Orleans, La.
1947—Jax Maids, New Orleans, La.
1948—Arizona Ramblers, Phoenix
1949—Arizona Ramblers, Phoenix
1950—Orange (Calif.) Lionettes
1951—Orange (Calif.) Lionettes
1952—Orange (Calif.) Lionettes
1953—Betsy Ross Rockets, Fresno, Calif.
1954—Leach Motors Rockets, Fresno, Calif.
1955-56—Orange (Calif.) Lionettes

U. S. PUBLIC LINKS CHAMPIONS

1922—Edmund R. Held
 1923—Richard J. Walsh
 1924—Joseph Coble
 1925—R. J. McAuliffe
 1926—Lester Bolstad
 1927-29—C. F. Kauffman
 1930—Robert E. Wingate
 1931—Charles Ferrara
 1932—R. L. Miller
 1933—Charles Ferrara

1934—David A. Mitchell
 1935—Frank Strafaci
 1936—B. Patrick Abbott
 1937—Bruce N. McCormick
 1938—Al Leach
 1939—Andrew Szwedko
 1940—Robert C. Clark
 1941—William M. Welch
 1942-45—No competition
 1946—Smiley Quick

1947—Wilfred Crossley
 1948—Michael R. Ferentz
 1949—Ken Towns
 1950—Stan Bielet
 1951—Dave Stanley
 1952—Omer L. Bogan
 1953—Ted Richards
 1954—Gene Andrews
 1955—Sam Kocsis
 1956—James Buxbaum

LAWN TENNIS

LAWN TENNIS is a comparatively modern modification of the ancient game of court tennis. Major Walter Clopton Wingfield thought that something like court tennis might be played outdoors on lawns and in December, 1873, at Nantclwyd, Wales, he introduced his new game under the name of *Sphairistike* at a lawn party. The game was a success and spread rapidly, but the name was a total failure and almost immediately disappeared when all the players and spectators began to refer to the new game as "lawn tennis." In the early part of 1874 a young lady named Mary Ewing Outerbridge returned from Bermuda to New York, bringing with her the implements and necessary equipment of the new game that she had obtained from a British Army supply store in Bermuda. Miss Outerbridge and friends played the first game of lawn tennis in the United States on the grounds of the Staten Island

Cricket and Baseball Club in the spring of 1874.

For a few years the new game went along in haphazard fashion under varying rules. Tennis balls were of no standard size or texture. The nets were set at different heights up to 5 feet on the side and 4 feet in the middle. Some courts were marked out in hour-glass shape, narrow in the middle and wide at both ends. But about 1880 standard measurements for the court and standard equipment within definite limits became the rule. In 1881 the United States Lawn Tennis Association was formed and conducted the first national championship at Newport, R. I. The international matches for the Davis Cup began with a series between the British and United States players on the courts of the Longwood Cricket Club, Chestnut Hill, Mass., in 1900, with the home players winning.

Lawn Tennis Statistics

Source: The Official U.S.L.T.A. Yearbook and Tennis Guide.

DAVIS CUP CHALLENGE ROUND RESULTS

MEN

No matches in 1901, 1910, 1915-18, and 1940-45.

Year	Result	Where played			
1900	United States 5, British Isles 0	Chestnut Hill	1928	France 4, United States 1	Paris
1902	United States 3, British Isles 2	Brooklyn	1929	France 3, United States 2	Paris
1903	British Isles 4, United States 1	Chestnut Hill	1930	France 4, United States 1	Paris
1904	British Isles 5, Belgium 0	Wimbledon	1931	France 3, Great Britain 2	Paris
1905	British Isles 5, United States 0	Wimbledon	1932	France 3, United States 2	Paris
1906	British Isles 5, United States 0	Wimbledon	1933	Great Britain 3, France 2	Paris
1907	Australasia 3, British Isles 2	Wimbledon	1934	Great Britain 4, United States 1	Wimbledon
1908	Australasia 3, United States 2	Melbourne	1935	Great Britain 5, United States 0	Wimbledon
1909	Australasia 5, United States 0	Sydney	1936	Great Britain 3, Australia 2	Wimbledon
1911	Australasia 5, United States 0	Christchurch	1937	United States 4, Great Britain 1	Wimbledon
1912	British Isles 3, Australasia 2	Melbourne	1938	United States 3, Australia 2	Philadelphia
1913	United States 3, British Isles 2	Wimbledon	1939	Australia 3, United States 2	Haverford
1914	Australasia 3, United States 2	Forest Hills	1946	United States 5, Australia 0	Melbourne
1919	Australasia 4, British Isles 1	Sydney	1947	United States 4, Australia 1	Forest Hills
1920	United States 5, Australasia 0	Auckland	1948	United States 5, Australia 0	Forest Hills
1921	United States 5, Japan 0	Forest Hills	1949	United States 4, Australia 1	Forest Hills
1922	United States 4, Australasia 1	Forest Hills	1950	Australia 4, United States 1	Forest Hills
1923	United States 4, Australasia 1	Forest Hills	1951	Australia 3, United States 2	Sydney
1924	United States 5, Australasia 0	Philadelphia	1952	Australia 4, United States 1	Adelaide
1925	United States 5, France 0	Philadelphia	1953	Australia 3, United States 2	Melbourne
1926	United States 4, France 1	Philadelphia	1954	United States 3, Australia 2	Sydney
1927	France 3, United States 2	Philadelphia	1955	Australia 5, United States 0	Forest Hills
			1956	Australia 5, United States 0	Adelaide

WIGHTMAN CUP RECORD

WOMEN

Year	Result	Where played			
1923	United States 7, England 0	Forest Hills	1937	United States 6, England 1	Forest Hills
1924	England 6, United States 1	Wimbledon	1938	United States 5, England 2	Wimbledon
1925	England 4, United States 3	Forest Hills	1939	United States 5, England 2	Forest Hills
1926	United States 4, England 3	Wimbledon	1946	United States 7, England 0	Wimbledon
1927	United States 5, England 2	Forest Hills	1947	United States 7, England 0	Forest Hills
1928	England 4, United States 3	Wimbledon	1948	United States 6, England 1	Wimbledon
1929	United States 4, England 3	Forest Hills	1949	United States 7, England 0	Haverford
1930	England 4, United States 3	Wimbledon	1950	United States 7, England 0	Wimbledon
1931	United States 5, England 2	Forest Hills	1951	United States 6, England 1	Longwood
1932	United States 4, England 3	Wimbledon	1952	United States 7, England 0	Wimbledon
1933	United States 4, England 3	Forest Hills	1953	United States 7, England 0	Rye, N. Y.
1934	United States 5, England 2	Wimbledon	1954	United States 6, England 0	Wimbledon
1935	United States 4, England 3	Forest Hills	1955	United States 6, England 1	Rye, N. Y.
1936	United States 4, England 3	Wimbledon	1956	United States 5, England 2	Wimbledon

UNITED STATES CHAMPIONS

Men's Singles

1881-87—Richard D. Sears	1905—Beals C. Wright	1929—William T. Tilden II	1943—Lt. (jg) Joseph R. Hunt
1888-89—Henry W. Slocum, Jr.	1906—William J. Clothier	1930—John H. Doeg	1944-45—Sgt. Frank A. Parker
1890-92—Oliver S. Campbell	1907-11—William A. Larned	1931-32—H. E. Vines, Jr.	1946-47—John A. Kramer
1893-94—Robert D. Wrenn	1912-13—M. E. McLoughlin*	1933-34—Fred J. Perry	1948-49—Richard Gonzales
1895—Fred H. Hovey	1914—R. N. Williams II	1935—Wilmer L. Allison	1950—Arthur Larsen
1896-97—Robert D. Wrenn	1915—William Johnston	1936—Fred J. Perry	1951-52—Frank Sedgman
1898-1900—Malcolm D. Whitman	1916—R. N. Williams II	1937-38—J. Donald Budge	1953—Tony Trabert
1901-02—William A. Larned	1917-18—R. Lindley Murray†	1939—Robert L. Riggs	1954—E. Victor Seixas, Jr.
1903—Hugh L. Doherty	1919—William Johnston	1940—Donald McNeill	1955—Tony Trabert
1904—Holcombe Ward	1920-25—William T. Tilden II	1941—Robert L. Riggs	1956—Ken Rosewall
	1926-27—Jean Rene Lacoste	1942—Frederick R. Schroeder, Jr.	
	1928—Henri Cochet		

* Challenge round abandoned in 1912. † Patriotic tournament in 1917.

Men's Doubles

1881—C. M. Clark-F. W. Taylor	1928—G. M. Lott, Jr.-V. F. Hennessey
1882-84—R. D. Sears-James Dwight	1929-30—G. M. Lott, Jr.-J. H. Doeg
1885—R. D. Sears-J. S. Clark	1931—W. L. Allison-John Van Ryn
1886-87—R. D. Sears-James Dwight	1932—E. H. Vines, Jr.-Keith Gledhill
1888—O. S. Campbell-V. G. Hall	1933-34—G. M. Lott, Jr.-L. R. Stoefen
1889—H. W. Slocum, Jr.-H. A. Taylor	1935—W. L. Allison-John Van Ryn
1890—V. G. Hall-Clarence Hobart	1936—J. D. Budge-C. G. Mako
1891-92—O. S. Campbell-R. P. Huntington, Jr.	1937—Baron G. von Cramm-Henner Henkel
1893-94—Clarence Hobart-F. H. Hovey	1938—J. D. Budge-C. G. Mako
1895—M. G. Chace-R. D. Wrenn	1939—A. K. Quist-J. E. Bromwich
1896—C. B. Neel-S. R. Neel	1940-41—J. A. Kramer-F. R. Schroeder, Jr.
1897-98—L. E. Ware-G. P. Sheldon, Jr.	1942—Lt. (jg) Gardner Mulloy-W. F. Talbert
1899-1901—Holcombe Ward-F. D. Davis	1943—J. A. Kramer-Cpl. F. A. Parker
1902-03—R. F. Doherty-H. L. Doherty	1944—Lt. Don McNeill-a/c Robert Falkenburg
1904-1906—Holcombe Ward-B. C. Wright	1945—Lt. (sg) Gardner Mulloy-W. F. Talbert
1907-10—H. H. Hackett-F. B. Alexander	1946—Gardnar Mulloy-W. F. Talbert
1911—R. D. Little-G. F. Touchard	1947—J. A. Kramer-F. R. Schroeder, Jr.
1912-14—M. E. McLoughlin-T. C. Bundy	1948—Gardnar Mulloy-W. F. Talbert
1915-16—William Johnston-C. J. Griffin	1949—John Bromwich-William Sidwell
1917—F. B. Alexander-H. A. Throckmorton*	1950—John Bromwich-Frank Sedgman
1918—W. T. Tilden II-Vincent Richards†	1951—Frank Sedgman-Kenneth McGregor
1919—N. E. Brookes-G. L. Patterson	1952—E. Victor Seixas, Jr.-Mervyn Rose
1920—William Johnston-C. J. Griffin	1953—Mervyn Rose-Rex Hartwig
1921-22—W. T. Tilden II-Vincent Richards	1954—E. Victor Seixas, Jr.-Tony Trabert
1923—W. T. Tilden II-B. I. C. Norton	1955—Kosei Kamo-Atsushi Miyagi
1924—H. O. Kinsey-R. G. Kinsey	1956—Lewis Hoad-Ken Rosewall
1925-26—Vincent Richards-R. N. Williams II	
1927—W. T. Tilden II-F. T. Hunter	

* Patriotic tournament.

† Challenge round abandoned.

Women's Singles

1887—Ellen F. Hansell	1900—Myrtle McAteer	1912-14—Mary K. Browne	1932-35—Helen Jacobs
1888-89—Bertha L. Townsend	1901—Elisabeth H. Moore	1915-18—Molla Bjurstedt*†	1936—Alice Marble
1890—Ellen C. Roosevelt	1902—Marion Jones	1919—Mrs. George W. Wightman	1937—Anita Lizana
1891-92—Mabel E. Cahill	1903—Elisabeth H. Moore	1920-22—Mrs. Molla B. Mallory	1938-40—Alice Marble
1893—Aline M. Terry	1904—May G. Sutton	1923-25—Helen N. Wills	1941—Mrs. Sarah P. Cooke
1894—Helen R. Helwig	1905—Elisabeth H. Moore	1926—Mrs. Molla B. Mallory	1946—Pauline M. Betz
1895—Juliette P. Atkinson	1906—Helen Homans	1927-29—Helen N. Wills	1947—A. Louise Brough
1896—Elisabeth H. Moore	1907—Evelyn Sears	1930—Betty Nuthall	1948-50—Mrs. M. Q. du Pont
1897-98—Juliette P. Atkinson	1908—Mrs. Maud Bargar-Wallach	1931—Mrs. Helen W. Moody	1951-53—Maureen Connolly
1899—Marion Jones	1909-11—Hazel V. Hotchkiss		1954-55—Doris Hart
			1956—Shirley Fry

* Louise Hammond won patriotic tournament in 1917.

† Challenge round abandoned in 1918.

Women's Doubles

1890—Ellen C. Roosevelt-Grace W. Roosevelt	1901—J. P. Atkinson-Myrtle McAteer
1891—Mabel E. Cahill-Mrs. W. F. Morgan	1902—J. P. Atkinson-Marion Jones
1892—Mabel E. Cahill-A. M. McKinley	1903—E. H. Moore-Carrie B. Neely
1893—Aline M. Terry-Hallie Butler	1904—May G. Sutton-Miriam Hall
1894-95—Helen R. Helwig-J. P. Atkinson	1905—Helen Homans-Carrie B. Neely
1896—E. H. Moore-J. P. Atkinson	1906—Mrs. L. S. Coe-Mrs. D. S. Platt
1897-98—J. P. Atkinson-Kathleen Atkinson	1907—Marie Weimer-Carrie B. Neely
1899—Jane W. Craven-Myrtle McAteer	1908—Evelyn Sears-Margaret Curtis
1900—Edith Parker-Hallie Champlin	1909-10—Hazel V. Hotchkiss-Edith E. Rotch

1911—Hazel V. Hotchkiss-Eleonora Sears
 1912—Dorothy Green-Mary K. Browne
 1913-14—Mary K. Browne-Mrs. R. H. Williams
 1915—Mrs. G. W. Wightman-Eleonora Sears
 1916-17—Molla Bjurstedt-Eleonora Sears
 1918-20—Marion Zinderstein-Eleanor Goss
 1921—Mary K. Browne-Mrs. R. H. Williams
 1922—Mrs. J. B. Jessup-Helen N. Wills
 1923—Kathleen McKane-Mrs. B. C. Covell
 1924—Mrs. G. W. Wightman-Helen N. Wills
 1925—Mary K. Browne-Helen N. Wills
 1926—Elizabeth Ryan-Eleanor Goss
 1927—Mrs. L. A. Godfree-Ermytrude Harvey
 1928—Mrs. G. W. Wightman-Helen N. Wills

1929—Mrs. Phoebe Watson-Mrs. L. R. C. Michell
 1930—Betty Nuthall-Sarah Palfrey
 1931—Betty Nuthall-Mrs. E. B. Wittingstall
 1932—Helen Jacobs-Sarah Palfrey
 1933—Betty Nuthall-Freda James
 1934—Helen Jacobs-Sarah Palfrey
 1935—Helen Jacobs-Mrs. S. P. Fabyan
 1936—Mrs. M. G. Van Ryn-Carolin Babcock
 1937-40—Mrs. S. P. Fabyan-Alice Marble
 1941—Mrs. S. P. Cooke-Margaret Osborne
 1942-47—A. Louise Brough-Margaret Osborne
 1948-50—A. Louise Brough-Mrs. Margaret O. du Pont
 1951-54—Doris Hart-Shirley Fry
 1955-56—A. Louise Brough-Mrs. Margaret O. du Pont

BRITISH (WIMBLEDON) CHAMPIONS

Men's Singles

1877—S. W. Gore
 1878—P. F. Hadow
 1879-80—J. T. Hartley
 1881-86—W. Renshaw
 1887—H. F. Lawford
 1888—E. Renshaw
 1889—W. Renshaw
 1890—W. J. Hamilton
 1891-92—W. Baddeley
 1893-94—J. Pim
 1895—W. Baddeley
 1896—H. S. Mahony

1897-1900—R. F. Doherty
 1901—A. W. Gore
 1902-06—H. L. Doherty
 1907—N. E. Brookes
 1908-09—A. W. Gore
 1910-13—A. F. Wilding
 1914—N. E. Brookes
 1919—G. L. Patterson
 1920-21—W. T. Tilden II
 1922—G. L. Patterson
 1923—W. M. Johnston
 1924—J. Borotra

1925—R. Lacoste
 1926—J. Borotra
 1927—H. Cochet
 1928—R. Lacoste
 1929—H. Cochet
 1930—W. T. Tilden II
 1931—S. B. Wood
 1932—H. E. Vines, Jr.
 1933—J. H. Crawford
 1934-36—F. J. Perry
 1937-38—J. D. Budge
 1939—R. L. Riggs

1946—Yvon Petra
 1947—John A. Kramer
 1948—R. Falkenburg
 1949—F. R. Schroeder, Jr.
 1950—Budge Patty
 1951—Richard Savitt
 1952—Frank Sedgman
 1953—E. Victor Seixas, Jr.
 1954—Jaroslav Drobný
 1955—Tony Trabert
 1956—Lewis Hoad

Men's Doubles

1879—L. R. Erskine-H. F. Lawford
 1880-81—W. Renshaw-E. Renshaw
 1882—J. T. Hartley-R. T. Richardson
 1883—C. W. Grinstead-C. E. Weldon
 1884-86—W. Renshaw-E. Renshaw
 1887—P. Bowes-Lyon-H. W. W. Wilberforce
 1888-89—W. Renshaw-E. Renshaw
 1890—J. L. Pim-F. O. Stoker
 1891—W. Baddeley-H. Baddeley
 1892—H. S. Barrow-E. W. Lewis
 1893—J. L. Pim-F. O. Stoker
 1894-96—W. Baddeley-H. Baddeley
 1897-1901—R. F. Doherty-H. L. Doherty
 1902—S. H. Smith-F. L. Riseley
 1903-05—R. F. Doherty-H. L. Doherty
 1906—S. H. Smith-F. L. Riseley
 1907—N. E. Brookes-A. F. Wilding

1908—A. F. Wilding-M. J. G. Ritchie
 1909—A. W. Gore-H. R. Barrett
 1910—A. F. Wilding-M. J. G. Ritchie
 1911—M. Decugis-A. H. Gobert
 1912-13—H. R. Barrett-C. P. Dixon
 1914—N. E. Brookes-A. F. Wilding
 1919—R. V. Thomas-P. O'Hara Wood
 1920—R. N. Williams II-C. S. Garland
 1921—R. Lycett-M. Woosnam
 1922—R. Lycett-J. O. Anderson
 1923—R. Lycett-L. A. Godfree
 1924—V. Richards-F. T. Hunter
 1925—J. Borotra-R. Lacoste
 1926—H. Cochet-J. Brugnon
 1927—W. T. Tilden II-F. T. Hunter
 1928—H. Cochet-J. Brugnon
 1929-30—W. Allison-J. Van Ryn

1931—G. M. Lott-J. Van Ryn
 1932-33—J. Borotra-J. Brugnon
 1934—G. M. Lott-L. R. Stofen
 1935—J. H. Crawford-A. K. Quist
 1936—C. R. D. Tuckey-G. P. Hughes
 1937-38—J. D. Budge-C. Gene Mako
 1939—R. L. Riggs-E. T. Cooke
 1946—J. A. Kramer-Tom Brown
 1947—J. A. Kramer-R. Falkenburg
 1948—J. Bromwich-F. Sedgman
 1949—F. Parker-R. Gonzales
 1950—J. Bromwich-A. Quist
 1951-52—F. Sedgman-K. McGregor
 1953—K. Rosewall-L. Hoad
 1954—R. Hartwig-M. Rose
 1955—R. Hartwig-L. Hoad
 1956—L. Hoad-K. Rosewall

Women's Singles

1884-85—M. Watson
 1886—Miss Bingley
 1887-88—L. Dod
 1889—Mrs. Hillyard
 1890—L. Rice
 1891-93—L. Dod
 1894—Mrs. Hillyard
 1895-96—C. Cooper
 1897—Mrs. Hillyard
 1898—C. Cooper
 1899-1900—Mrs. Hillyard

1901—Mrs. Sterry
 1902—M. E. Robb
 1903-04—D. K. Douglas
 1905—M. Sutton
 1906—D. K. Douglas
 1907—M. Sutton
 1908—Mrs. Sterry
 1909—D. Boothby
 1910-11—Mrs. L. Chambers
 1912—Mrs. Larcombe
 1913-14—Mrs. L. Chambers

1919-23—Mlle. Lenglen
 1924—K. McKang
 1925—Mlle. Lenglen
 1926—Mrs. Godfree
 1927-29—Helen Wills
 1930—Mrs. F. S. Moody
 1931—Frl. C. Aussen
 1932-33—Mrs. F. S. Moody
 1934—D. E. Round
 1935—Mrs. F. S. Moody
 1936—Helen Jacobs

1937—D. E. Round
 1938—Mrs. F. S. Moody
 1939—Alice Marble
 1946—Pauline M. Betz
 1947—Margaret Osborne
 1948-50—A. Louise Brough
 1951—Doris Hart
 1952-54—M. Connolly
 1955—A. Louise Brough
 1956—Shirley Fry

Women's Doubles

1913—Mrs. McNair-Miss Boothby
 1914—E. Ryan-A. M. Morton
 1919-23—Mlle. Lenglen-E. Ryan
 1924—Mrs. Wightman-Helen Wills
 1925—Mlle. Lenglen-E. Ryan
 1926—E. Ryan-M. K. Browne
 1927—E. Ryan-Helen Wills
 1928—Mrs. H. Watson-P. Saunders
 1929—Mrs. H. Watson-Mrs. Michell

1930—E. Ryan-Mrs. F. S. Moody
 1931—Mrs. Shepherd-Barron-Mrs. Mudford King
 1932—Mlle. D. Metaxa-Mlle. J. Sigart
 1933-34—E. Ryan-Mme. Mathieu
 1935-36—K. E. Stammers-F. James
 1937—Mrs. S. Mathieu-A. M. Yorka
 1938-39—A. Marble-Mrs. S. P. Fabyan

1946—A. L. Brough-M. Osborne
 1947—Doris Hart-Mrs. Pat Todd
 1948-50—A. L. Brough-Mrs. M. O. du Pont
 1951-53—Doris Hart-Shirley Fry
 1954—A. L. Brough-Mrs. M. O. du Pont
 1955—Angela Mortimer-Ann Shilcock
 1956—Althea Gibson-Angela Buxton

FOOTBALL

THE PASTIME of kicking a ball around goes back beyond the limits of recorded history. Ancient savage tribes played football of a primitive kind. There was a ball-kicking game played by Athenians and Spartans and Corinthians 2500 years ago and the Greeks had a name for it: *Episkuros*. The Romans had a somewhat similar game called *Harpastum* and are supposed to have carried the game with them when they invaded the British Isles in the First Century, B.C.

Undoubtedly the game known in the United States as Football traces directly to the English game of Rugby, though the modifications have been many and rather sweeping in some directions. There was informal football on our college lawns well over a century ago and an annual Freshman-Sophomore series of "scrimmages" began at Yale in 1840. But the first formal intercollegiate football game in this country was the Princeton-Rutgers contest played at New Brunswick, N. J., on Nov. 6, 1869, with Rutgers winning by 6 goals to 4. Columbia took to the intercollegiate football field in 1870 and Yale in 1872. Soon many colleges were playing football in the autumn.

In those old days games were played with twenty-five, twenty, fifteen or eleven

men on a side by mutual agreement. In 1880 there was a football convention at which Walter Camp of Yale persuaded the delegates to agree to a rule calling for eleven players on a side. In 1882 there was adopted the rule requiring the offensive team to make 5 yards in three downs or surrender the ball to its opponents. The game grew so rough that it was attacked as brutal by many critics and some colleges abandoned the sport. Conditions were so bad in 1906 that President Theodore Roosevelt, an enthusiast for all sports, called a meeting of Yale, Harvard and Princeton representatives at the White House in the hope of reforming and improving the game. The outcome was that the game, with the forward pass introduced and some other modifications of the rules inserted, became faster and cleaner and gradually grew to the tremendous popularity it enjoys today.

Professional football, now firmly established, is an outgrowth of intercollegiate football. The first professional game was played in 1895 at Latrobe, Pa. The National Football League was founded in 1921. The All-America Conference went into action in 1946. At the end of the 1949 season the two major play-for-pay circuits merged, retaining the name of the older league.

Famous Series Records

Year	Harv.-Yale	Yale-Prin.	Harv.-Prin.	Army-Navy	Year	Harv.-Yale	Yale-Prin.	Harv.-Prin.	Army-Navy
1890	12 6	32 0	.. ..	0 24	1925	0 0	12 25	0 36	10 3
1891	0 10	19 0	.. ..	32 16	1926	7 12	7 10	0 12	21 21
1892	0 6	12 0	.. ..	4 12	1927	0 14	14 6	.. ..	14 9
1893	0 6	0 6	.. ..	4 6	1928	17 0	2 12	.. ..	.. ..
1894	4 12	24 0	.. ..	.. ..	1929	10 6	13 0	.. ..	.. ..
1895	.. ..	20 10	4 12	.. ..	1930	13 0	10 7	.. ..	6 0
1896	.. ..	6 24	0 12	.. ..	1931	0 3	51 14	.. ..	17 7
1897	0 0	6 0	.. ..	.. ..	1932	0 19	7 7	.. ..	20 0
1898	17 0	0 6	.. ..	.. ..	1933	19 6	2 27	.. ..	12 7
1899	0 0	10 11	.. ..	17 5	1934	0 14	7 0	0 19	0 3
1900	0 28	29 5	.. ..	7 11	1935	7 14	7 38	0 35	28 6
1901	22 0	12 0	.. ..	11 5	1936	13 14	26 23	14 14	0 7
1902	0 23	12 5	.. ..	22 8	1937	13 6	26 0	34 6	6 0
1903	0 16	6 11	.. ..	40 5	1938	7 0	7 20	26 7	14 7
1904	0 12	12 0	.. ..	11 0	1939	7 20	7 13	6 9	0 10
1905	0 6	23 4	.. ..	6 6	1940	28 0	7 10	0 0	0 14
1906	0 6	0 0	.. ..	0 10	1941	14 0	6 20	6 4	6 14
1907	0 12	12 10	.. ..	0 6	1942	3 7	13 6	19 14	0 14
1908	4 0	11 6	.. ..	6 4	1943	.. ..	27 6	.. ..	0 13
1909	0 8	17 0	.. ..	.. ..	1944	.. ..	.. ..	.. ..	23 7
1910	0 0	5 3	.. ..	0 3	1945	0 28	20 14	.. ..	32 13
1911	0 0	3 6	6 8	0 3	1946	14 27	30 2	13 12	21 18
1912	20 0	6 6	16 6	0 6	1947	21 31	0 17	7 33	21 0
1913	15 5	3 3	3 0	22 9	1948	20 7	14 20	7 47	21 21
1914	36 0	19 14	20 0	20 0	1949	6 29	13 21	13 33	38 0
1915	41 0	13 7	10 6	14 0	1950	6 14	12 47	26 63	2 14
1916	3 6	10 0	3 0	15 7	1951	21 21	0 27	13 54	7 42
1919	10 3	6 13	10 10	0 6	1952	14 41	21 27	21 41	0 7
1920	9 0	0 20	14 14	0 7	1953	13 0	26 24	0 6	20 7
1921	10 3	13 7	3 10	0 7	1954	13 9	14 21	14 9	20 27
1922	10 3	0 3	3 10	17 14	1955	7 21	0 13	7 6	14 6
1923	0 13	27 0	5 0	0 0	1956	14 42	42 20	20 35	7 7
1924	6 19	10 9	0 34	12 0					

RECORD OF ANNUAL POSTSEASON GAMES

Source: Official N.C.A.A. Football Guide

Rose Bowl (Pasadena, Calif.)

1902	Michigan 49, Stanford 0
1916	Washington State 14, Brown 0
1917	Oregon 14, Pennsylvania 0
1918	Mare Island Marines 19, Camp Lewis 7
1919	Great Lakes 17, Mare Island Marines 0
1920	Harvard 7, Oregon 6
1921	California 28, Ohio State 0
1922	Washington & Jefferson 0, California 0
1923	Southern California 14, Penn State 3
1924	Navy 14, Washington 14
1925	Notre Dame 27, Stanford 10
1926	Alabama 20, Washington 19
1927	Alabama 7, Stanford 7
1928	Stanford 7, Pittsburgh 6
1929	Georgia Tech 8, California 7
1930	Southern California 47, Pittsburgh 14
1931	Alabama 24, Washington State 0
1932	Southern California 21, Tulane 12
1933	Southern California 35, Pittsburgh 0
1934	Columbia 7, Stanford 0
1935	Alabama 29, Stanford 13
1936	Stanford 7, Southern Methodist 0
1937	Pittsburgh 21, Washington 0
1938	California 13, Alabama 0
1939	Southern California 7, Duke 3
1940	Southern California 14, Tennessee 0
1941	Stanford 21, Nebraska 13
1942	Oregon State 20, Duke 16*
1943	Georgia 9, U. C. L. A. 0
1944	Southern California 29, Washington 0
1945	Southern California 25, Tennessee 0
1946	Alabama 34, Southern California 14
1947	Illinois 45, U. C. L. A. 14
1948	Michigan 49, Southern California 0
1949	Northwestern 20, California 14
1950	Ohio State 17, California 14
1951	Michigan 14, California 6
1952	Illinois 40, Stanford 7
1953	Southern California 7, Wisconsin 0
1954	Michigan State 28, U. C. L. A. 20
1955	Ohio State 20, Southern California 7
1956	Michigan State 17, U. C. L. A. 14
1957	Iowa 35, Oregon State 19

* Played at Durham, N. C.

Cotton Bowl (Dallas, Tex.)

1937	Texas Christian 16, Marquette 6
1938	Rice 28, Colorado 14
1939	St. Mary's (Calif.) 20, Texas Tech 13
1940	Clemson 6, Boston College 3
1941	Texas A & M 13, Fordham 12
1942	Alabama 29, Texas A & M 21
1943	Texas 14, Georgia Tech 7
1944	Randolph Field 7, Texas 7
1945	Oklahoma A & M 34, Texas Christian 4
1946	Texas 40, Missouri 27
1947	Louisiana State 0, Arkansas 0
1948	Southern Methodist 13, Penn State 13
1949	Southern Methodist 21, Oregon 13
1950	Rice 27, North Carolina 13
1951	Tennessee 20, Texas 14
1952	Kentucky 20, Texas Christian 7
1953	Texas 16, Tennessee 0
1954	Rice 28, Alabama 6
1955	Georgia Tech 14, Arkansas 6
1956	Mississippi 14, Texas Christian 13
1957	Texas Christian 28, Syracuse 27

Sugar Bowl (New Orleans, La.)

1935	Tulane 20, Temple 14
1936	Texas Christian 3, Louisiana State 2
1937	Santa Clara 21, Louisiana State 14
1938	Santa Clara 6, Louisiana State 0
1939	Texas Christian 15, Carnegie Tech 7
1940	Texas A & M 14, Tulane 13
1941	Boston College 19, Tennessee 13
1942	Fordham 2, Missouri 0
1943	Tennessee 14, Tulsa 7
1944	Georgia Tech 20, Tulsa 18
1945	Duke 29, Alabama 26
1946	Oklahoma A & M 33, St. Mary's (Calif.) 13
1947	Georgia 20, North Carolina 10
1948	Texas 27, Alabama 7
1949	Oklahoma 14, North Carolina 6
1950	Oklahoma 35, Louisiana State 0
1951	Kentucky 13, Oklahoma 7
1952	Maryland 28, Tennessee 13
1953	Georgia Tech 24, Mississippi 7
1954	Georgia Tech 42, West Virginia 19
1955	Navy 21, Mississippi 0
1956	Georgia Tech 7, Pittsburgh 0
1957	Baylor 13, Tennessee 7

Orange Bowl (Miami, Fla.)

1933	Miami 7, Manhattan 0
1934	Duquesne 33, Miami 7
1935	Bucknell 26, Miami 0
1936	Catholic University 20, Mississippi 19
1937	Duquesne 13, Mississippi State 12
1938	Alabama Poly. 6, Michigan State 0
1939	Tennessee 17, Oklahoma 0
1940	Georgia Tech 21, Missouri 7
1941	Mississippi State 14, Georgetown 7
1942	Georgia 40, Texas Christian 26
1943	Alabama 37, Boston College 21
1944	Louisiana State 19, Texas A & M 14
1945	Tulsa 26, Georgia Tech 12
1946	Miami 13, Holy Cross 6
1947	Rice 8, Tennessee 0
1948	Georgia Tech 20, Kansas 14
1949	Texas 41, Georgia 28
1950	Santa Clara 21, Kentucky 13
1951	Clemson 15, Miami (Fla.) 14
1952	Georgia Tech 17, Baylor 14
1953	Alabama 61, Syracuse 6
1954	Oklahoma 7, Maryland 0
1955	Duke 36, Nebraska 7
1956	Oklahoma 20, Maryland 6
1957	Colorado 27, Clemson 21

Giants Win All-Star Game

The New York Giants, 1956 pro champions, defeated the collegians, 22-13, in the 1957 renewal of the annual All-Star game in Chicago. While a crowd of 75,000 looked on in rain, Charley Conerly passed to Ken McAfee for two Giant touchdowns, while their teammate, Ben Agajanian kicked two field goals and two extra points. It was the 15th defeat of the series for the College All-Stars. They have won seven, while two other games ended in ties.

Professional Football

NATIONAL LEAGUE CHAMPIONS

Year	Team	Won	Lost	Tied	Pct.	Year	Team	Won	Lost	Tied	Pct.
1921	Bears (Staley's)	10	1	1	.909	1942	*Washington Redskins (E)	10	1	0	.909
1922	Canton Bulldogs	10	0	2	1.000	1942	*Chicago Bears (W)	11	0	0	1.000
1923	Canton Bulldogs	11	0	1	1.000	1943	*Chicago Bears (W)	8	1	1	.889
1924	Cleveland Bulldogs	7	1	1	.875	1943	Washington Redskins (E)	6	3	1	.667
1925	Chicago Cardinals	11	2	1	.846	1944	*Green Bay Packers (W)	8	2	0	.800
1926	Frankford Yellow Jackets	14	1	1	.933	1944	New York Giants (E)	8	1	1	.889
1927	New York Giants	11	1	1	.917	1945	*Cleveland Rams (W)	9	1	0	.900
1928	Providence Steamrollers	8	1	2	.888	1945	Washington Redskins (E)	8	2	0	.800
1929	Green Bay Packers	12	0	1	1.000	1946	*Chicago Bears (W)	8	2	1	.800
1930	Green Bay Packers	11	3	1	.786	1946	New York Giants (E)	7	3	1	.700
1931	Green Bay Packers	12	2	0	.857	1947	*Chicago Cardinals (W)	9	3	0	.750
1932	Chicago Bears	7	1	6	.875	1947	Philadelphia Eagles (E)	9	4	0	.692
1933	*Chicago Bears (W)	10	2	1	.833	1948	*Philadelphia Eagles (E)	9	2	1	.818
1933	New York Giants (E)	11	3	0	.786	1948	Chicago Cardinals (W)	11	1	0	.917
1934	*New York Giants (E)	8	5	0	.615	1949	*Philadelphia Eagles (E)	11	1	0	.917
1934	Chicago Bears (W)	13	0	0	1.000	1949	Los Angeles Rams (W)	8	2	2	.800
1935	*Detroit Lions (W)	7	3	2	.700	1950	*Cleveland Browns (A)	11	2	0	.846
1935	New York Giants (E)	9	3	0	.750	1950	Los Angeles Rams (N)	10	3	0	.769
1936	*Green Bay Packers (W)	10	1	1	.909	1951	*Los Angeles Rams (N)	8	4	0	.667
1936	Boston Redskins (E)	7	5	0	.587	1951	Cleveland Browns (A)	11	1	0	.917
1937	*Washington Redskins (E)	8	3	0	.727	1952	*Detroit Lions (N)	9	3	0	.750
1937	Chicago Bears (W)	9	1	1	.900	1952	Cleveland Browns (A)	8	4	0	.667
1938	*New York Giants (E)	8	2	1	.800	1953	*Detroit Lions (W)	10	2	0	.833
1938	Green Bay Packers (W)	8	3	0	.727	1953	Cleveland Browns (E)	11	1	0	.917
1939	*Green Bay Packers (W)	9	2	0	.818	1954	*Cleveland Browns (E)	9	3	0	.750
1939	New York Giants (E)	9	1	1	.900	1954	Detroit Lions (W)	9	2	1	.818
1940	*Chicago Bears (W)	8	3	0	.727	1955	*Cleveland Browns (E)	9	2	1	.818
1940	Washington Redskins (E)	9	2	0	.818	1955	Los Angeles Rams (W)	8	3	1	.727
1941	*Chicago Bears (W)	10	1	0	.909	1956	*New York Giants (E)	8	3	1	.727
1941	New York Giants (E)	8	3	0	.727	1956	Chicago Bears (W)	9	2	1	.818

* Won title play-off. (W) Western Division champion. (E) Eastern Division champion. League divided into American (A) and National (N) conferences in 1950. In 1953 the league returned to the Eastern-Western set-up.

CHAMPIONSHIP PLAY-OFF RESULTS

1933	Chicago Bears 23, New York 21.	1945	Cleveland 15, Washington 14.
1934	New York 30, Chicago Bears 13.	1946	Chicago Bears 24, New York 14.
1935	Detroit 26, New York 7.	1947	Chicago Cardinals 28, Philadelphia 21.
1936	Green Bay 21, Boston 6.	1948	Philadelphia 7, Chicago Cardinals 0.
1937	Washington 28, Chicago Bears 21.	1949	Philadelphia 14, Los Angeles 0.
1938	New York 23, Green Bay Packers 17.	1950	Cleveland 30, Los Angeles 28.
1939	Green Bay 27, New York 0.	1951	Los Angeles 24, Cleveland 17.
1940	Chicago Bears 73, Washington 0.	1952	Detroit 17, Cleveland 7.
1941	Chicago Bears 37, New York 9.	1953	Detroit 17, Cleveland 16.
1942	Washington 14, Chicago Bears 6.	1954	Cleveland 56, Detroit 10.
1943	Chicago Bears 41, Washington 21.	1955	Cleveland 38, Los Angeles 14.
1944	Green Bay 14, New York 7.	1956	New York 47, Chicago Bears 7.

CHESS

Source: American Chess Bulletin of New York.

World Champions

1851-58	Adolph Anderssen, Breslau, Germany
1858-62	Paul Morphy, New Orleans, La.
1862-66	Adolf Anderssen, Breslau, Germany
1866-94	William Steinitz, Vienna, Austria
1894-1921	Emanuel Lasker, Berlin, Germany
1921-27	Jose R. Capablanca, Havana, Cuba
1927-35	Alexander A. Alekhine, Moscow, Russia
1935-37	Dr. Max Euwe, Amsterdam, the Netherlands
1937-46	Alexander A. Alekhine, Moscow, Russia*
1948-56	Mikhail Botvinnik, Leningrad, Russia

United States Champions

1852-62	Paul Morphy, New Orleans, La.
1871-87	George H. Mackenzie, New York
1887-92	Max Judd, St. Louis, Mo.

* Alekhine, a French citizen, died on March 23, 1946.

1892-94	Simon Lipschuetz, New York
1894	Jackson W. Showalter, Georgetown, Ky.
1894	Albert B. Hodges, Staten Island, N. Y.*
1894-97	Jackson W. Showalter, Georgetown, Ky.
1897-1906	Harry Nelson Pillsbury, Boston, Mass.
1906-09	Jackson W. Showalter, Georgetown, Ky.
1909-36	Frank J. Marshall, New York
1936-44	Samuel Reshevsky, New York†
1944-46	Arnold S. Denker, New York
1946	Samuel Reshevsky, Boston
1948	Herman Steiner, Los Angeles
1951	Larry Evans, New York
1954-56	Arthur Bisguier, New York

* Retired after winning return match with Showalter.
† In 1942, Isaac I. Kashtan of New York was co-champion for a while because of a tie with Reshevsky in that year's tournament. Reshevsky won the play-off.

THE OLYMPIC GAMES

(W)—Site of Winter Games. (S)—Site of Summer Games.

1896—Athens	1920—Antwerp	1932—Los Angeles (S)	1952—Oslo (W)
1900—Paris	1924—Chamonix (W)	1936—Garmisch-Parten-	1952—Helsinki (S)
1904—St. Louis	1924—Paris (S)	kirchen (W)	1956—Cortina d'Am-
1906—Athens	1928—St. Moritz (W)	1936—Berlin (S)	pezzo, Italy (W)
1908—London	1928—Amsterdam (S)	1948—St. Moritz (W)	1956—Melbourne (S)
1912—Stockholm	1932—Lake Placid (W)	1948—London (S)	

THE first Olympic Games of which there is record occurred in 776 B.C. and consisted of one event, a great foot race of about 200 yards held on a plain by the River Alpheus (now the Ruphia) just outside the little town of Olympia in Greece. It was from that date that the Greeks began to keep their calendar by "Olympiads," the four-year spans between the celebrations of the famous games. There was a religious as well as an athletic significance to the ancient games and the shrines, temples and sacred fires within the Olympic enclosure were the scenes of worship all through the year whereas the Olympic Games, at the height of their popularity, never lasted more than five days and were held only once every four years.

The competition was entirely amateur at the start and the only prizes were laurel wreaths. Only free Greek citizens were allowed to compete and they had to undergo a strict training course that lasted ten months. But civic rivalry led to trickery and professionalism and the

games became degraded after some centuries. When Rome conquered Greece, the Roman emperors turned the Olympic Games from patriotic, religious and athletic festivals into carnivals and circuses. They dragged on malodorously until they were finally halted by decree of Emperor Theodosius I of Rome in A.D. 394.

The modern Olympic Games, which started in Athens in 1896, are the result of the devotion of a French educator, Baron Pierre de Coubertin, to the idea that, since boys and athletics have gone together down the ages, education and athletics might well go hand-in-hand toward a better international understanding. He planned a revival of the ancient Olympic Games on a world-wide basis and succeeded in getting nine nations to send athletes to the first of the modern games in 1896. Since then more than 35,000 athletes representing about 60 nations have competed in the games.

Interrupted for the second time by war, the modern Olympic Games were resumed at London in 1948.

OLYMPIC GAMES CHAMPIONS, 1896-1956

Source: United States Olympic Association

TRACK AND FIELD—MEN

60-Meter Run

1900	A. E. Kraenzlein, United States.....	7s.
1904	Archie Hahn, United States.....	7s.

100-Meter Run

1896	T. E. Burke, United States.....	12s.
1900	F. W. Jarvis, United States.....	10.8s.
1904	Archie Hahn, United States.....	11s.
1906	Archie Hahn, United States.....	11.2s.
1908	R. E. Walker, South Africa.....	10.8s.
1912	R. C. Craig, United States.....	10.8s.
1920	C. W. Paddock, United States.....	10.8s.
1924	H. M. Abrahams, Great Britain.....	10.6s.
1928	Percy Williams, Canada.....	10.8s.
1932	Eddie Tolan, United States.....	10.3s.
1936	Jesse Owens, United States.....	10.3s.*
1948	Harrison Dillard, United States.....	10.3s.
1952	Lindy Remigino, United States.....	10.4s.
1956	Bobby Morrow, United States.....	10.5s.

* With the wind.

200-Meter Run

1900	J. W. B. Tewksbury, United States.....	22.2s.
1904	Archie Hahn, United States.....	21.6s.
1908	R. Kerr, Canada.....	22.4s.

1912	R. C. Craig, United States.....	21.7s.
1920	Allan Woodring, United States.....	22s.
1924	J. V. Scholz, United States.....	21.6s.
1928	Percy Williams, Canada.....	21.8s.
1932	Eddie Tolan, United States.....	21.2s.
1936	Jesse Owens, United States.....	20.7s.
1948	Melvin E. Patton, United States.....	21.1s.
1952	Andrew Stanfield, United States.....	20.7s.
1956	Bobby Morrow, United States.....	20.6s.

400-Meter Run

1896	T. E. Burke, United States.....	54.2.
1900	M. W. Long, United States.....	49.4.
1904	H. L. Hillman, United States.....	49.2.
1906	Paul Pilgrim, United States.....	53.2.
1908	W. Halswelle, Great Britain (walkover).....	50s.
1912	C. D. Reidpath, United States.....	48.2s.
1920	B. G. D. Rudd, South Africa.....	49.6s.
1924	E. H. Liddell, Great Britain.....	47.6s.
1928	Ray Barbuti, United States.....	47.8s.
1932	William Carr, United States.....	46.2s.
1936	Archie Williams, United States.....	46.5s.
1948	Arthur Wint, Jamaica, B.W.I.....	46.2s.
1952	George Rhoden, Jamaica, B. W. I.....	45.9s.
1956	Charles Jenkins, United States.....	46.7s.

800-Meter Run

1896	E. H. Flack, Great Britain.....	2m.11s.
1900	A. E. Tysoe, Great Britain.....	2m.1.4s.
1904	J. D. Lightbody, United States.....	1m.56s.
1906	Paul Pilgrim, United States.....	2m.1.2s.
1908	M. W. Sheppard, United States.....	1m.52.8s.
1912	J. E. Meredith, United States.....	1m.51.9s.
1920	A. G. Hill, Great Britain.....	1m.53.4s.
1924	D. G. A. Lowe, Great Britain.....	1m.52.4s.
1928	D. G. A. Lowe, Great Britain.....	1m.51.8s.
1932	Thomas Hampson, Great Britain.....	1m.49.8s.
1936	John Woodruff, United States.....	1m.52.9s.
1948	Malvin Whitfield, United States.....	1m.49.2s.
1952	Malvin Whitfield, United States.....	1m.49.2s.
1956	Tom Courtney, United States.....	1m.47.7s.

1,500-Meter Run

1896	E. H. Flack, Great Britain.....	4m.33.2s.
1900	C. Bennett, Great Britain.....	4m.6s.
1904	J. D. Lightbody, United States.....	4m.5.4s.
1906	J. D. Lightbody, United States.....	4m.12s.
1908	M. W. Sheppard, United States.....	4m.3.4s.
1912	A. N. S. Jackson, Great Britain.....	3m.56.8s.
1920	A. G. Hill, Great Britain.....	4m.1.8s.
1924	Paavo Nurmi, Finland.....	3m.53.6s.
1928	H. E. Larva, Finland.....	3m.53.2s.
1932	Luigi Beccali, Italy.....	3m.51.2s.
1936	J. E. Lovelock, New Zealand.....	3m.47.8s.
1948	Henri Eriksson, Sweden.....	3m.49.8s.
1952	Joseph Barthel, Luxembourg.....	3m.45.2s.
1956	Ron Delany, Eire.....	3m.41.2s.

5,000-Meter Run

1912	H. Kolehmainen, Finland.....	14m.36.6s.
1920	J. Guillemot, France.....	14m.55.6s.
1924	Paavo Nurmi, Finland.....	14m.31.2s.
1928	Willie Ritola, Finland.....	14m.38s.
1932	Lauri Lehtinen, Finland.....	14m.30s.
1936	Gunnar Hockert, Finland.....	14m.22.2s.
1948	Gaston Reiff, Belgium.....	14m.17.6s.
1952	Emil Zatopek, Czechoslovakia.....	14m.6.6s.
1956	Vladimir Kuts, U.S.S.R.....	13m.39.6s.

5-Mile Run

1906	H. Hawtrey, Great Britain.....	26m.26.2s.
1908	E. R. Voigt, Great Britain.....	25m.11.2s.

10,000-Meter Run

1912	H. Kolehmainen, Finland.....	31m.20.8s.
1920	Paavo Nurmi, Finland.....	31m.45.8s.
1924	Willie Ritola, Finland.....	30m.23.2s.
1928	Paavo Nurmi, Finland.....	30m.18.8s.
1932	Janusz Kucoscinski, Poland.....	30m.11.4s.
1936	Ilmari Salminen, Finland.....	30m.15.4s.
1948	Emil Zatopek, Czechoslovakia.....	29m.59.6s.
1952	Emil Zatopek, Czechoslovakia.....	29m.17s.
1956	Vladimir Kuts, U.S.S.R.....	28m.45.6s.

Marathon

1896	S. Loues, Greece.....	2h.55m.20s
1900	M. Teato, France.....	2h.59m.
1904	T. J. Hicks, United States.....	3h.28m.53s.
1906	W. J. Sherring, Canada.....	2h.51m.23.6s.
1908	John J. Hayes, United States.....	2h.55m.18.4s.
1912	K. K. McArthur, South Africa.....	2h.36m.54.8s.
1920	H. Kolehmainen, Finland.....	2h.32m.35.8s.
1924	A. O. Stenros, Finland.....	2h.41m.22.6s.
1928	El Ouafi, France.....	2h.32m.57s.
1932	Juan Zabala, Argentina.....	2h.31m.36s.
1936	Kitei Son, Japan.....	2h.29m.19.2s.
1948	Delfo Cabrera, Argentina.....	2h.34m.51.6s.
1952	Emil Zatopek, Czechoslovakia.....	2h.23m.3.2s.
1956	Alain Mimoun, France.....	2h.25m.

110-Meter Hurdles

1896	Curtis, United States.....	17.6s.
1900	A. E. Kraenzlein, United States.....	15.4s.
1904	F. W. Schule, United States.....	16s.
1906	R. G. Leavitt, United States.....	16.2s.
1908	Forrest Smithson, United States.....	15s.
1912	F. W. Kelly, United States.....	15.1s.
1920	E. J. Thomson, Canada.....	14.8s.
1924	D. C. Kinsey, United States.....	15s.
1928	S. Atkinson, South Africa.....	14.8s.
1932	George Saling, United States.....	14.6s.
1936	Forrest Towns, United States.....	14.2s.
1948	William Porter, United States.....	13.9s.
1952	Harrison Dillard, United States.....	13.7s.
1956	Lee Calhoun, United States.....	13.5s.

200-Meter Hurdles

1900	A. E. Kraenzlein, United States.....	25.4s.
1904	H. L. Hillman, United States.....	24.6s.

400-Meter Hurdles

1900	J. W. B. Tewksbury, United States.....	57.6s.
1904	H. L. Hillman, United States.....	53s.
1908	C. J. Bacon, United States.....	55s.
1920	F. F. Loomis, United States.....	54s.
1924	F. M. Taylor, United States.....	52.6s.
1928	Lord David Burghley, Great Britain.....	53.4s.
1932	Robert Tisdall, Ireland.....	51.8s.*
1936	Glenn Hardin, United States.....	52.4s.
1948	Ray Cochran, United States.....	51.1s.
1952	Charles Moore, United States.....	50.8s.
1956	Glenn Davis, United States.....	50.1s.

* Record not allowed.

2,500-Meter Steeplechase

1900	G. W. Orton, United States.....	7m.34s.
1904	J. D. Lightbody, United States.....	7m.39.6s.

3,000-Meter Steeplechase

1920	P. Hodge, Great Britain.....	10m.2.4s.
1924	Willie Ritola, Finland.....	9m.33.6s.
1928	T. A. Loukola, Finland.....	9m.21.8s.
1932	Volmari Iso-Hollo, Finland.....	10m.33.4s.*
1936	Volmari Iso-Hollo, Finland.....	9m.3.8s.
1948	Thure Sjostrand, Sweden.....	9m.4.6s.
1952	Horace Ashenfelter, United States.....	8m.45.4s.
1956	Chris Brasher, Great Britain.....	8m.41.2s.

* About 3,450 meters—extra lap by error.

3,200-Meter Steeplechase

1908	A. Russell, Great Britain.....	10m.47.8s.
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4,000-Meter Steeplechase

1900	C. Rimmer, Great Britain.....	12m.58.4s.
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3,000-Meter Team

1912	United States.....	9 pts.
1920	United States.....	10 pts.
1924	Finland.....	8 pts.

3-Mile Team

1908	Great Britain.....	6 pts.
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8,000-Meter X-Country

1912	H. Kolehmainen, Finland.....	45m.11.6s.
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8,000-Meter X-Country Team

1912	Sweden.....	
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10,000-Meter X-Country

1920	Paavo Nurmi, Finland.....	27m.15s.
1924	Paavo Nurmi, Finland.....	32m.54.8s.

10,000-Meter X-Country Team

1912	Sweden.....	10 pts.
1920	Finland.....	10 pts.
1924	Finland.....	11 pts.

1,500-Meter Walk

1906	George V. Bonhag, United States.....	7m.12.6s.
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3,000-Meter Walk

1920	Ugo Frigerio, Italy.....	13m.14.2s.
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3,500-Meter Walk

1908	G. E. Larner, Great Britain.....	14m.55s.
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10,000-Meter Walk

1912	G. H. Goulding, Canada.....	46m.28.4s
1920	Ugo Frigerio, Italy.....	48m.6.2s.
1924	Ugo Frigerio, Italy.....	47m.49s.
1948	John Mikaelsson, Sweden.....	45m.13.2s.
1952	John Mikaelsson, Sweden.....	45m.2.8s.

10-Mile Walk

1908	G. E. Larner, Great Britain.....	1h.15m.57.4s.
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20,000-Meter Walk

1956	Leonid Spirin, Russia.....	1h.31m.27s.
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50,000-Meter Walk

1932	Thomas W. Green, Great Britain.....	4h.50m.10s.
1936	Harold Whitlock, Great Britain.....	4h.30m.41.4s.
1948	John Ljunggren, Sweden.....	4h.41m.52s.
1952	Giuseppe Bordini, Italy.....	4h.28m.7.8s.
1956	Norman Read, New Zealand.....	4h.30m.42.8s.

400-Meter Relay

1912	Great Britain.....	42.4s.
1920	United States.....	42.2s.
1924	United States.....	41s.
1928	United States.....	41s.
1932	United States.....	40s.
1936	United States.....	39.8s.
1948	United States.....	40.6s.
1952	United States.....	40.1s.
1956	United States.....	39.5s.

1,600-Meter Relay

1908	United States.....	3m.27.2s.
1912	United States.....	3m.16.6s.
1920	Great Britain.....	3m.22.2s.
1924	United States.....	3m.16s.
1928	United States.....	3m.14.2s.
1932	United States.....	3m.8.2s.
1936	Great Britain.....	3m.9s.
1948	United States.....	3m.10.4s.
1952	Jamaica, B. W. I.....	3m.3.9s.
1956	United States.....	3m.4.8s.

Pole Vault

1896	W. W. Hoyt, United States.....	10 ft. 9 $\frac{3}{4}$ in.
1900	I. K. Baxter, United States.....	10 ft. 9.9 in.
1904	C. E. Dvorak, United States.....	11 ft. 6 in.
1906	Gonder, France.....	11 ft. 6 in.
1908	A. C. Gilbert, United States.....	12 ft. 2 in.
	E. T. Cook, Jr., United States.....	
1912	H. J. Babcock, United States.....	12 ft. 11 $\frac{1}{2}$ in.
1920	F. K. Foss, United States.....	13 ft. 5 in.
1924	L. S. Barnes, United States.....	12 ft. 11 $\frac{1}{2}$ in.
1928	Sabin W. Carr, United States.....	13 ft. 9 $\frac{3}{4}$ in.
1932	William Miller, United States.....	14 ft. 1 $\frac{1}{2}$ in.
1936	Earle Meadows, United States.....	14 ft. 3 $\frac{1}{4}$ in.
1948	Guinn Smith, United States.....	14 ft. 1 $\frac{1}{4}$ in.
1952	Robert Richards, United States.....	14 ft. 11.14 in.
1956	Robert Richards, United States.....	14 ft. 11 $\frac{1}{2}$ in.

Standing High Jump

1900	R. C. Ewry, United States.....	5 ft. 5 in.
1904	R. C. Ewry, United States.....	4 ft. 11 in.
1906	R. C. Ewry, United States.....	5 ft. 1 $\frac{1}{2}$ in.

1908	R. C. Ewry, United States.....	5 ft. 2 in.
1912	Platt Adams, United States.....	5 ft. 4 $\frac{1}{2}$ in.

Running High Jump

1896	E. H. Clark, United States.....	5 ft. 11 $\frac{1}{4}$ in.
1900	I. K. Baxter, United States.....	6 ft. 2 $\frac{3}{4}$ in.
1904	S. S. Jones, United States.....	5 ft. 11 in.
1906	Con Leahy, Ireland.....	5 ft. 9 $\frac{3}{4}$ in.
1908	H. F. Porter, United States.....	6 ft. 3 in.
1912	A. W. Richards, United States.....	6 ft. 4 in.
1920	R. W. Landon, United States.....	6 ft. 4 $\frac{1}{4}$ in.
1924	H. M. Osborn, United States.....	6 ft. 5 $\frac{1}{4}$ in.
1928	Robert W. King, United States.....	6 ft. 4 $\frac{1}{2}$ in.
1932	Duncan McNaughton, Canada.....	6 ft. 5 $\frac{1}{2}$ in.
1936	Cornelius Johnson, United States.....	6 ft. 7 $\frac{1}{4}$ in.
1948	John Winter, Australia.....	6 ft. 6 in.
1952	Walter Davis, United States.....	6 ft. 8.32 in.
1956	Charles Dumas, United States.....	6 ft. 11 $\frac{1}{4}$ in.

Standing Broad Jump

1900	R. C. Ewry, United States.....	10 ft. 6 $\frac{1}{2}$ in.
1904	R. C. Ewry, United States.....	11 ft. 4 $\frac{1}{2}$ in.
1906	R. C. Ewry, United States.....	10 ft. 10 in.
1908	R. C. Ewry, United States.....	10 ft. 11 $\frac{1}{4}$ in.
1912	C. Tscilittiras, Greece.....	11 ft. $\frac{3}{4}$ in.

Running Broad Jump

1896	E. H. Clark, United States.....	20 ft. 9 $\frac{3}{4}$ in.
1900	A. E. Kraenzlein, United States.....	23 ft. 6 $\frac{1}{2}$ in.
1904	Myer Prinstein, United States.....	24 ft. 1 in.
1906	Myer Prinstein, United States.....	23 ft. 7 $\frac{1}{2}$ in.
1908	Frank Irons, United States.....	24 ft. 6 $\frac{1}{2}$ in.
1912	A. L. Gutterson, United States.....	24 ft. 11 $\frac{1}{4}$ in.
1920	Wm. Petterson, Sweden.....	23 ft. 5 $\frac{1}{2}$ in.
1924	DeHart Hubbard, United States.....	24 ft. 5 $\frac{1}{2}$ in.
1928	Edward B. Hamm, United States.....	25 ft. 4 $\frac{1}{4}$ in.
1932	Edward Gordon, United States.....	25 ft. $\frac{3}{4}$ in.
1936	Jesse Owens, United States.....	26 ft. 5 $\frac{1}{4}$ in.
1948	Willie Steele, United States.....	25 ft. 8 in.
1952	Jerome Biffle, United States.....	24 ft. 10.03 in.
1956	Gregory Bell, United States.....	25 ft. 8 $\frac{1}{4}$ in.

Standing Hop, Step, and Jump

1900	R. C. Ewry, United States.....	34 ft. 8 $\frac{1}{2}$ in.
1904	R. C. Ewry, United States.....	34 ft. 7 $\frac{1}{4}$ in.

Running Hop, Step, and Jump

1896	J. B. Connolly, United States.....	45 ft.
1900	Myer Prinstein, United States.....	47 ft. 4 $\frac{1}{4}$ in.
1904	Myer Prinstein, United States.....	47 ft.
1906	P. O'Connor, Ireland.....	46 ft. 2 in.
1908	T. J. Ahearne, Great Britain.....	48 ft. 11 $\frac{1}{4}$ in.
1912	G. Lindblom, Sweden.....	48 ft. 5 $\frac{1}{2}$ in.
1920	V. Tuulos, Finland.....	47 ft. 6 $\frac{1}{2}$ in.
1924	A. W. Winter, Australia.....	50 ft. 11 $\frac{1}{2}$ in.
1928	Mikio Oda, Japan.....	49 ft. 10 $\frac{1}{4}$ in.
1932	Chuhei Nambu, Japan.....	51 ft. 7 in.
1936	Naoto Tajima, Japan.....	52 ft. 5 $\frac{1}{2}$ in.
1948	Arne Ahman, Sweden.....	50 ft. 6 $\frac{1}{4}$ in.
1952	Adhemar da Silva, Brazil.....	53 ft. 2.59 in.
1956	Adhemar da Silva, Brazil.....	53 ft. 7 $\frac{1}{2}$ in.

16-Lb. Shot-put

1896	Robert Garrett, United States.....	36 ft. 2 in.
1900	R. Sheldon, United States.....	46 ft. 3 $\frac{1}{2}$ in.
1904	Ralph Rose, United States.....	48 ft. 7 in.
1906	M. J. Sheridan, United States.....	40 ft. 4 $\frac{1}{2}$ in.
1908	Ralph Rose, United States.....	46 ft. 7 $\frac{1}{2}$ in.
1912	P. J. McDonald, United States.....	50 ft. 4 in.
1920	V. Porhola, Finland.....	48 ft. 7 $\frac{1}{2}$ in.
1924	Clarence Houser, United States.....	49 ft. 2 $\frac{1}{2}$ in.
1928	John Kuck, United States.....	52 ft. 1 $\frac{1}{4}$ in.
1932	Leo Sexton, United States.....	52 ft. 6 $\frac{1}{4}$ in.
1936	Hans Woellke, Germany.....	53 ft. 1 $\frac{1}{2}$ in.
1948	Wilbur Thompson, United States.....	56 ft. 2 in.
1952	Parry O'Brien, United States.....	57 ft. 1.43 in.
1956	Parry O'Brien, United States.....	60 ft. 11 in.

16-Lb. Shot-put (Both Hands)

1912	Ralph Rose, United States.....	90 ft. 5½ in.
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16-Lb. Hammer Throw

1900	J. J. Flanagan, United States.....	167 ft. 4 in.
1904	J. J. Flanagan, United States.....	168 ft. 1 in.
1908	J. J. Flanagan, United States.....	170 ft. 4¼ in.
1912	M. J. McGrath, United States.....	177 ft. 7 in.
1920	P. J. Ryan, United States.....	173 ft. 5½ in.
1924	F. D. Tootell, United States.....	174 ft. 10¼ in.
1928	Patrick O'Callaghan, Ireland.....	168 ft. 7½ in.
1932	Patrick O'Callaghan, Ireland.....	176 ft. 11½ in.
1936	Karl Hein, Germany.....	185 ft. 4 in.
1948	Imre Nemeth, Hungary.....	183 ft. 11½ in.
1952	Jozsef Csermak, Hungary.....	197 ft. 11.67 in.
1956	Harold Connolly, United States.....	207 ft. 2¼ in.

56-Lb. Weight Throw

1904	E. Desmarteau, Canada.....	34 ft. 4 in.
1920	P. J. McDonald, United States.....	36 ft. 11½ in.

Discus Throw

1896	Robert Garrett, United States.....	95 ft. 7½ in.
1900	R. Bauer, Hungary.....	118 ft. 2.9 in.
1904	M. J. Sheridan, United States.....	128 ft. 10½ in.
1906	M. J. Sheridan, United States.....	136 ft. ¼ in.
1908	M. J. Sheridan, United States.....	134 ft. 2 in.
1912	A. R. Taipale, Finland.....	148 ft. 3.9 in.
1920	E. Niklander, Finland.....	146 ft. 7 in.
1924	Clarence Houser, United States.....	151 ft. 5¼ in.
1928	Clarence Houser, United States.....	155 ft. 2¼ in.
1932	John Anderson, United States.....	162 ft. 4¾ in.
1936	Ken Carpenter, United States.....	165 ft. 7¾ in.
1948	Alfredo Consolini, Italy.....	173 ft. 2 in.
1952	Simeon Iness, United States.....	180 ft. 6.85 in.
1956	Al Oerter, United States.....	184 ft. 10½ in.

Discus Throw—Greek Style

1906	W. Jaervinen, Finland.....	115 ft. 4 in.
1908	M. J. Sheridan, United States.....	124 ft. 8 in.

Discus Throw (Right and Left Hand)

1912	A. R. Taipale, Finland.....	271 ft. 10½ in.
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Javelin Throw

1906	E. Lemming, Sweden.....	175 ft. 6 in.
1908	E. Lemming, Sweden.....	179 ft. 10½ in.
1912	E. Lemming, Sweden.....	198 ft. 11¼ in.
1920	Jonni Myyra, Finland.....	215 ft. 9¼ in.
1924	Jonni Myyra, Finland.....	206 ft. 6¼ in.
1928	E. H. Lundquist, Sweden.....	218 ft. 6¼ in.
1932	Matti Jarvinen, Finland.....	238 ft. 7 in.
1936	Gerhard Stoeck, Germany.....	235 ft. 8¼ in.
1948	Kaj Rautavaara, Finland.....	228 ft. 10½ in.
1952	Cy Young, United States.....	242 ft. 0.79 in.
1956	Egil Danielsen, Norway.....	281 ft. 2¼ in.

Javelin Throw—Free Style

1908	E. Lemming, Sweden.....	178 ft. 7½ in.
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Javelin Throw (Both Hands)

1912	J. J. Saaristo, Finland.....	358 ft. 11½ in.
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Pentathlon

1906	H. Mellander, Sweden.....	24 pts.
1912	F. R. Bie, Norway.....	21 pts.
1920	E. R. Lehtonen, Finland.....	14 pts.
1924	E. R. Lehtonen, Finland.....	16 pts.

Decathlon

1912	H. Wieslander, Sweden.....	7,724.495 pts.
1920	H. Lovland, Norway.....	6,804.35 pts.
1924	H. M. Osborn, United States.....	7,710.775 pts.
1928	Paavo Yrjola, Finland.....	8,053.29 pts.

1932	James Bausch, United States.....	8,462.23 pts.
1936	Glenn Morris, United States.....	7,900 pts.
1948	Robert B. Mathias, United States.....	7,139 pts.
1952	Robert B. Mathias, United States.....	7,887 pts.
1956	Milton Campbell, United States.....	7,937 pts.

(Old point system used from 1912 to 1932; new point system used 1936, 1948; revised point system used 1952, 1956.)

TRACK AND FIELD—WOMEN**100-Meter Run**

1928	Elizabeth Robinson, United States.....	12.2s.
1932	Stanislawa Walasiewicz, Poland.....	11.9s.
1936	Helen Stephens, United States.....	11.5s.
1948	Fanny Blankers-Koen, Holland.....	11.9s.
1952	Marjorie Jackson, Australia.....	11.5s.
1956	Betty Cuthbert, Australia.....	11.5s.

200-Meter Run

1948	Fanny Blankers-Koen, Holland.....	24.4s.
1952	Marjorie Jackson, Australia.....	23.7s.
1956	Betty Cuthbert, Australia.....	23.4s.

800-Meter Run

1928	Lina Radke, Germany.....	2m.16.8s
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80-Meter Hurdles

1932	Mildred Didrikson, United States.....	11.7s.
1936	Trebisonoda Valla, Italy.....	11.7s.
1948	Fanny Blankers-Koen, Holland.....	11.2s.
1952	Shirley S. de la Hunty, Australia.....	10.9s.
1956	Shirley S. de la Hunty, Australia.....	10.7s.

400-Meter Relay

1928	Canada.....	48.4s.
1932	United States.....	47s.
1936	United States.....	46.9s.
1948	Holland.....	47.5s.
1952	United States.....	45.9s.
1956	Australia.....	44.5s.

Running High Jump

1928	Ethel Catherwood, Canada.....	5 ft. 3 in.
1932	Jean Shiley, United States.....	5 ft. 5¼ in.
1936	Ibolya Csak, Hungary.....	5 ft. 3 in.
1948	Alice Coachman, United States.....	5 ft. 6¼ in.
1952	Ester Brand, South Africa.....	5 ft. 5.75 in.
1956	Mildred McDaniel, United States.....	5 ft. 9¼ in.

Running Broad Jump

1948	V. O. Gyarmati, Hungary.....	18 ft. 8¼ in.
1952	Yvette Williams, New Zealand.....	20 ft. 5.66 in.
1956	Elzbieta Krzesinska, Poland.....	20 ft. 10 in.

Discus Throw

1928	H. Konopacka, Poland.....	129 ft. 11½ in.
1932	Lillian Copeland, United States.....	133 ft. 2 in.
1936	Gisela Mauermayer, Germany.....	156 ft. 3½ in.
1948	Micheline Ostermeyer, France.....	137 ft. 6½ in.
1952	Nina Romaschkova, U.S.S.R.....	168 ft. 8.5 in.
1956	Olga Fikotova, Czechoslovakia.....	176 ft. 1½ in.

Javelin Throw

1932	Mildred Didrikson, United States.....	143 ft. 4 in.
1936	Tiffany Fleischer, Germany.....	148 ft. 2¼ in.
1948	H. Bauma, Austria.....	149 ft. 6 in.
1952	Dana Zatopek, Czechoslovakia.....	165 ft. 7.05 in.
1956	Inessa Janzeme, U.S.S.R.....	176 ft. 8½ in.

Shot-put

1948	Micheline Ostermeyer, France.....	45 ft. 1½ in.
1952	Galina Zybina, U.S.S.R.....	50 ft. 2.58 in.
1956	Tamara Tishkevich, U.S.S.R.....	54 ft. 5 in.

SWIMMING—MEN

50 Yards

1904	Zoltan de Halomay, Hungary	28s.
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100 Meters

1896	Alfred Hajos, Hungary	1m.22.2s.
1904	Zoltan de Halomay, Hungary	1m.2.8s.*
1906	C. M. Daniels, United States	1m.13s.
1908	C. M. Daniels, United States	1m.5.6s.
1912	Duke P. Kahanamoku, United States	1m.3.4s.
1920	Duke P. Kahanamoku, United States	1m.1.4s.
1924	John Weissmuller, United States	59s.
1928	John Weissmuller, United States	58.6s.
1932	Yasuji Miyazaki, Japan	58.2s.
1936	Ferenc Csik, Hungary	57.6s.
1948	Walter Ris, United States	57.3s.
1952	Clarke Scholes, United States	57.4s.
1956	Jon Henricks, Australia	55.4s.

* 100 yards.

220 Yards

1900	F. C. V. Lane, Australia	
1904	C. M. Daniels, United States	2m.44.2s.

400 Meters

1904	C. M. Daniels, United States	6m.16.2s.*
1906	Otto Sheff, Austria	6m.23.8s.
1908	H. Taylor, Great Britain	5m.36.8s.
1912	G. R. Hodgson, Canada	5m.24.4s.
1920	N. Ross, United States	5m.26.8s.
1924	John Weissmuller, United States	5m.4.2s.
1928	Albert Zorilla, Argentina	5m.1.6s.
1932	Clarence Crabbe, United States	4m.48.4s.
1936	Jack Medica, United States	4m.44.5s.
1948	William Smith, United States	4m.41s.
1952	Jean Boiteux, France	4m.30.7s.
1956	Murray Rose, Australia	4m.27.3s.

* 440 yards.

500 Meters

1896	Paul Neumann, Austria	
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880 Yards

1904	Emil Rausch, Germany	13m.11.4s.
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1,000 Meters

1900	Jarvis, Great Britain	
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1,200 Meters

1896	Alfred Hajos, Hungary	
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1,500 Meters

1908	H. Taylor, Great Britain	22m.48.4s.
1912	G. R. Hodgson, Canada	22m.
1920	N. Ross, United States	22m.23.2s.
1924	A. M. Charlton, Australia	20m.6.6s.
1928	Arne Borg, Sweden	19m.51.8s.
1932	Kusuo Kitamura, Japan	19m.12.4s.
1936	Noboru Terada, Japan	19m.13.7s.
1948	James McLane, United States	19m.18.5s.
1952	Ford Konno, United States	18m.30s.
1956	Murray Rose, Australia	17m.58.9s.

1,600 Meters

1906	H. Taylor, Great Britain	28m.28s.
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One Mile

1904	Emil Rausch, Germany	27m.18.2s.
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800-Meter Relay

1908	Great Britain	10m.55.6s.
1912	Australia	10m.11.6s.
1920	United States	10m.4.4s.

1924	United States	9m.53.4s.
1928	United States	9m.36.2s.
1932	Japan	8m.58.4s.
1936	Japan	8m.51.5s.
1948	United States	8m.46s.
1952	United States	8m.31.1s.
1956	Australia	8m.23.6s.

100-Meter Backstroke

1904	Walter Brack, Germany	1m.16.8s.*
1908	Arno Bieberstein, Germany	1m.24.6s.
1912	Harry Hehner, United States	1m.21.2s.
1920	Warren Kealoha, United States	1m.15.2s.
1924	Warren Kealoha, United States	1m.13.2s.
1928	George Kojac, United States	1m.8.2s.
1932	Masaji Kiyokawa, Japan	1m.8.6s.
1936	Adolph Kiefer, United States	1m.5.9s.
1948	Allen Stack, United States	1m.6.4s.
1952	Yoshinobu Oyakawa, United States	1m.5.4s.
1956	David Thiele, Australia	1m.2.2s.

* 100 yards.

200-Meter Butterfly

1956	Bill Yorzyk, United States	2m.19.3s.
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200-Meter Breast Stroke

1908	F. Holman, Great Britain	3m.9.2s.
1912	Walter Bathe, Germany	3m.1.8s.
1920	H. Malmroth, Sweden	3m.4.4s.
1924	R. D. Skelton, United States	2m.56.6s.
1928	Y. Tsuruta, Japan	2m.48.8s.
1932	Yoshiyuki Tsuruta, Japan	2m.45.4s.
1936	Tetsuo Hamuro, Japan	2m.42.5s.
1948	Joseph Verdeur, United States	2m.39.3s.
1952	John Davies, Australia	2m.34.4s.
1956	Masura Furukawa, Japan	2m.34.7s.

400-Meter Breast Stroke

1904	Georg Zacharias, Germany	7m.23.6s.
1920	H. Malmroth, Sweden	6m.31.8s.

1,000-Meter Team Race

1906	Hungary	17m.16.2s.
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Springboard Diving

	Points
1904	G. E. Sheldon, United States..... 12 2-3
1906	Gottlob Walz, Germany.....
1908	Albert Zuerner, Germany..... 85.5
1912	Paul Guenther, Germany..... 6
1920	L. E. Kuehn, United States..... 6
1924	A. C. White, United States..... 7
1928	P. Desjardins, United States..... 185.04
1932	Michael Galitzen, United States..... 161.38
1936	Richard Degener, United States..... 163.57
1948	Bruce Harlan, United States..... 163.64
1952	David Browning, United States..... 205.29
1956	Robert Clotworthy, United States..... 159.56

Fancy High Diving

	Points
1912 Eric Adlerz, Sweden.....	7
1920 C. E. Pinkston, United States.....	7
1924 A. C. White, United States.....	9

Plain High Diving

	Points
1908 H. Johanssen, Sweden.....	83.70
1912 Erik Adlerz, Sweden.....	7
1920 Arvid Wallman, Sweden.....	7
1924 Richard Eve, Australia.....	13½

Plunge for Distance

1904	W. E. Dickey, United States	62 ft. 6 in.
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Platform Diving

		Points
1928	P. Desjardins, United States.....	98.74
1932	Harold Smith, United States.....	124.80
1936	Marshall Wayne, United States.....	113.58
1948	Samuel Lee, United States.....	130.05
1952	Samuel Lee, United States.....	156.28
1956	Joaquin Capilla, Mexico.....	152.44

WATER POLO

1900	Great Britain	1928	Germany
1904	United States	1932	Hungary
1908	Great Britain	1936	Hungary
1912	Great Britain	1948	Italy
1920	Great Britain	1952	Hungary
1924	France	1956	Hungary

SWIMMING—WOMEN**100 Meters**

1920	Ethelda Bleibtrey, United States.....	1m.13.6s.
1922	Fanny Durack, Australia.....	1m.22.2s.
1924	Ethel Lackie, United States.....	1m.12.4s.
1928	Albina Ospiowich, United States.....	1m.11s.
1932	Helene Madison, United States.....	1m.6.8s.
1936	Hendrika Mastenbroek, Holland.....	1m.5.9s.
1948	Greta Andersen, Denmark.....	1m.6.3s.
1952	Katalin Szoke, Hungary.....	1m.6.8s.
1956	Dawn Fraser, Australia.....	1m.2s.

300 Meters

1920	Ethelda Bleibtrey, United States.....	4m.34s.
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400 Meters

1924	Martha Norelius, United States.....	6m.2.2s.
1928	Martha Norelius, United States.....	5m.42.8s.
1932	Helene Madison, United States.....	5m.28.5s.
1936	Hendrika Mastenbroek, Holland.....	5m.26.4s.
1948	Ann Curtis, United States.....	5m.17.8s.
1952	Valerie Gyenge, Hungary.....	5m.12.1s.
1956	Lorraine Crapp, Australia.....	4m.54.6s.

400-Meter Relay

1912	Great Britain.....	5m.52.8s.
1920	United States.....	5m.11.6s.
1924	United States.....	4m.58.8s.
1928	United States.....	4m.47.6s.
1932	United States.....	4m.38s.
1936	Holland.....	4m.36s.
1948	United States.....	4m.29.2s.
1952	Hungary.....	4m.24.4s.
1956	Australia.....	4m.17.1s.

100-Meter Backstroke

1924	Sybil Bauer, United States.....	1m.23.2s.
1928	Marie Braun, Holland.....	1m.22s.
1932	Eleanor Holm, United States.....	1m.19.4s.
1936	Dina Senff, Holland.....	1m.18.9s.
1948	Karen Harup, Denmark.....	1m.14.4s.
1952	Joan Harrison, South Africa.....	1m.14.3s.
1956	Judy Grinham, Great Britain.....	1m.12.9s.

100-Meter Butterfly

1956	Shelley Mann, United States.....	1m.11s.
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200-Meter Breast Stroke

1924	Lucy Morton, Great Britain.....	3m.33.2s.
1928	Hilde Schrader, Germany.....	3m.12.6s.
1932	Clare Dennis, Australia.....	3m.6.3s.

1936	Hideko Maehata, Japan.....	3m.3.6s.
1948	Nel van Vliet, Netherlands.....	2m.57.2s.
1952	Eva Szekeley, Hungary.....	2m.51.7s.
1956	Ursula Happe, Germany.....	2m.53.1s.

Plain High Diving

	Points
1912 Greta Johansson, Sweden.....	39.9
1920 Miss Fryland, Denmark.....	6
1924 Caroline Smith, United States.....	9

Springboard Diving

	Points
1920 Aileen Riggan, United States.....	9
1924 Elizabeth Becker, United States.....	8
1928 Helen Meany, United States.....	78.62
1932 Georgia Coleman, United States.....	87.52
1936 Marjorie Gestring, United States.....	89.27
1948 Victoria M. Draves, United States.....	108.74
1952 Mrs. Patricia McCormick, United States.....	147.30
1956 Mrs. Patricia McCormick, United States.....	142.36

Platform High Diving

	Points
1928 Elizabeth B. Pinkston, United States.....	31.60
1932 Dorothy Poynton, United States.....	40.26
1936 Mrs. Dorothy Poynton Hill, United States.....	33.93
1948 Victoria M. Draves, United States.....	68.87
1952 Mrs. Patricia McCormick, United States.....	79.37
1956 Mrs. Patricia McCormick, United States.....	84.85

BASKETBALL

1904	United States	1952	United States
1936	United States	1956	United States
1948	United States		

BOXING**Flyweight**

1904	George V. Finnegan, United States
1920	Frank De Genaro, United States
1924	Fidel La Barba, United States
1928	Anton Kocsis, Hungary
1932	Stephen Enekes, Hungary
1936	Willi Kaiser, Germany
1948	Pascual Perez, Argentina
1952	Nate Brooks, United States
1956	Terence Spinks, Great Britain

Bantamweight

1904	O. L. Kirk, United States
1908	H. Thomas, Great Britain
1920	Clarence Walker, South Africa
1924	W. H. Smith, South Africa
1928	Vittorio Tamagnini, Italy
1932	Horace Gwynne, Canada
1936	Ulderico Sergo, Italy
1948	Tibor Csik, Hungary
1952	Pentti Hamalainen, Finland
1956	Wolfgang Behrendt, Germany

Featherweight

1904	O. L. Kirk, United States
1908	R. K. Gunn, Great Britain
1920	Paul Fritsch, France
1924	John Fields, United States
1928	L. Van Klaveren, Holland
1932	Carmelo A. Robledo, Argentina
1936	Oscar Casanovas, Argentina
1948	Ernesto Formenti, Italy
1952	Jan Zachara, Czechoslovakia
1956	Vladimir Safronov, U.S.S.R.

Lightweight

1904	H. J. Spanger, United States
1908	F. Grace, Great Britain
1920	Samuel Mosberg, United States
1924	Harold Nielsen, Denmark
1928	Carlo Orlandi, Italy
1932	Lawrence Stevens, South Africa
1936	Imre Harangi, Hungary
1948	Gerry Dreyer, South Africa
1952	Aureliano Bolognesi, Italy
1956	Richard McTaggart, Great Britain

Light Welterweight

1952	Charles Adkins, United States
1956	Vladimir Enguibarlan, U.S.S.R.

Welterweight

1904	Al Young, United States
1920	T. Schneider, Canada
1924	J. S. Delarge, Belgium
1928	Edward Morgan, New Zealand
1932	Edward Flynn, United States
1936	Sten Suvio, Finland
1948	Julius Torma, Czechoslovakia
1952	Zygmunt Chycha, Poland
1956	Necolae Linca, Romania

Light Middleweight

1952	Laszlo Papp, Hungary
1956	Laszlo Papp, Hungary

Middleweight

1904	Charles Mayer, United States
1908	John Douglas, Great Britain
1920	H. W. Mallin, Great Britain
1924	H. W. Mallin, Great Britain
1928	Piero Toscani, Italy
1932	Carmen Barth, United States
1936	Jean Despeaux, France
1948	Laszlo Papp, Hungary
1952	Floyd Patterson, United States
1956	Guenadii Chatkov, U.S.S.R.

Light Heavyweight

1920	Edward Eagan, United States
1924	H. J. Mitchell, Great Britain
1928	Victorio Avendano, Argentina
1932	David E. Carstens, South Africa
1936	Roger Michlot, France
1948	George Hunter, South Africa
1952	Norvel Lee, United States
1956	James Boyd, United States

Heavyweight

1904	Sam Berger, United States
1908	A. L. Oldham, Great Britain
1920	Rawson, Great Britain
1924	Otto von Porat, Norway
1928	A. Rodriguez Jurado, Argentina
1932	Santiago A. Lovell, Argentina
1936	Herbert Runge, Germany
1948	Rafael Iglesias, Argentina
1952	Edward Sanders, United States
1956	Peter Rademacher, United States

FIGURE SKATING**Men**

1908	Ulrich Salchow, Sweden	377.3
1920	Gillis Grafstrom, Sweden	405.5
1924	Gillis Grafstrom, Sweden	367.89
1928	Gillis Grafstrom, Sweden	385.77

Points

1932	Karl Schaefer, Austria	371.1
1936	Karl Schaefer, Austria	422.7
1948	Richard Button, United States	191.177
1952	Richard Button, United States	192.256
1956	Hayes Alan Jenkins, United States	166.4

Women

1908	Mrs. Madge Syers, Great Britain	252.5
1920	Magda Mauroy, Sweden	182.7
1924	Mrs. Herma Szabo-Planck, Austria	299.17
1928	Sonja Henie, Norway	350.3
1932	Sonja Henie, Norway	328.94
1936	Sonja Henie, Norway	424.5
1948	Barbara Ann Scott, Canada	163.077
1952	Jeannette Altwegg, Great Britain	161.756
1956	Tenley Albright, United States	169.6

Pairs

1908	Alma Huber-Heinrich Burger, Germany	11.2
1920	Ludovika and Walter Jacobsson, Finland	11.5
1924	Helene Englemann-Alfred Berger, Austria	10.64
1928	Andree Joly-Pierre Brunet, France	11.2
1932	Andree and Pierre Brunet, France	10.95
1936	Maxie Herber-Ernst Baier, Germany	11.5
1948	Micheline Lannoy-Pierre Baughniet, Belgium	11.227
1952	Ria and Paul Falk, Germany	11.4
1956	Elisabeth Schwarz-Kurt Oppelt, Austria	11.31

Special Figures

1908	Nikolai Panin, Russia	43.8
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SPEED SKATING**500 Meters**

1924	Charles Jewtraw, United States	44s.
1928	Clas Thunberg, Finland, and Bernt Even- sen, Norway (tie)	43.4s.
1932	John Shea, United States	43.4s.
1936	Ivar Ballangrud, Norway	43.4s.
1948	Finn Helgesen, Norway	43.1s.
1952	Ken Henry, United States	43.2s.
1956	Eugeny Grishin, U.S.S.R.	40.2s.

1,500 Meters

1924	Clas Thunberg, Finland	2m. 20.8s.
1928	Clas Thunberg, Finland	2m. 21.1s.
1932	John Shea, United States	2m. 57.5s.
1936	Charles Mathisen, Norway	2m. 19.2s.
1948	Sverre Farstad, Norway	2m. 17.6s.
1952	Hjalmar Andersen, Norway	2m. 20.4s.
1956	Eugeny Grishin, U.S.S.R., and Yuri Mik- hailov, U.S.S.R. (tie)	2m. 8.6s.

5,000 Meters

1924	Clas Thunberg, Finland	8m. 39s.
1928	Ivar Ballangrud, Norway	8m. 50.5s.
1932	Irving Jaffee, United States	9m. 40.8s.
1936	Ivar Ballangrud, Norway	8m. 19.6s.
1948	Reidar Liakey, Norway	8m. 29.4s.
1952	Hjalmar Andersen, Norway	8m. 10.6s.
1956	Boris Shilkov, U.S.S.R.	7m. 48.7s.

10,000 Meters

1924	Julien Skutnabb, Finland	18m. 4.8s.
1928	*Irving Jaffee, United States	18m. 36.5s.
1932	Irving Jaffee, United States	19m. 13.6s.
1936	Ivar Ballangrud, Norway	17m. 24.3s.
1948	Ake Seyffarth, Sweden	17m. 26.3s.
1952	Hjalmar Andersen, Norway	16m. 45.8s.
1956	Sigge Ericsson, Sweden	16m. 35.9s.

* Thaw caused cancellation of event. Jaffee had best time.

Combined

1924	Clas Thunberg, Finland	5.5 pts.
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Other 1956 Olympic Champions

Field hockey..... India
Ice Hockey..... U.S.S.R.
Soccer..... U.S.S.R.

Bobsledding

2-man—Italy
4-man—Switzerland

Canoeing

KAYAK

1,000-m. singles—Gert Fredriksson, Sweden
1,000-m. pairs—Michael Scheuer-Meinrad Miltenberger, Germany
10,000-m. singles—Gert Fredriksson, Sweden
10,000-m. pairs—Janos Uranyi-Laszlo Fabian, Hungary
500-m. women's singles—Elisavota Dementieva, U.S.S.R.

CANADIAN

1,000-m. singles—Leon Rottman, Rumania
1,000-m. pairs—Alexe Dumitru-Simion Ismailciuc, U.S.S.R.
10,000-m. singles—Leon Rottman, Rumania
10,000-m. pairs—Pavel Kharin-Gratsian Botev, U.S.S.R.

Cycling

1,000-m. sprint—Michel Rousseau, France
1,000-m. time trial—Leandro Faggin, Italy
2,000-m. tandem—Jan Browne-Tony Marchanti, Austria
4,000-m. tandem—Italy
Road race—Ercolo Baldini, Italy. Team—France

Equestrian

3-day event—Petrus Kastenman, Sweden. Team—Great Britain
Dressage—Henri St. Cyr, Sweden. Team—Sweden
Jumping—Hans Winkler, Germany. Team—Germany

Fencing

Foil—Christian D'Orlola, France. Team—Italy
Epee—Carlo Pavesti, Italy. Team—Italy
Saber—Rudolf Karpati, Hungary. Team—Hungary
Women's foil—Gillian Sheen, Great Britain

Gymnastics

Pompeled horse—Boris Chakhline, U.S.S.R.
Parallel bars—Victor Tchoukarine, U.S.S.R.
Free standing exercises—Valentine Mouratov, U.S.S.R.
Rings—Albert Azarian, U.S.S.R.
Horizontal bar—Takashi Ono, Japan
Combined exercises—Victor Tchoukarine, U.S.S.R.
Long horse—Helmuth Bantz, Germany, and Valentine Mouratov, U.S.S.R. (tie)
Team—U.S.S.R.

WOMEN

Beam exercises—Agnes Keleti, Hungary
Free standing exercises—Agnes Keleti, Hungary, and Larisa Latynina, U.S.S.R. (tie)
Side horse vaulting—Larisa Latynina, U.S.S.R.
Parallel bars—Agnes Keleti, Hungary
Combined exercises—Larisa Latynina, U.S.S.R.
Team drill—Hungary
Team—U.S.S.R.

Modern Penthalon

Individual—Lars Hall, Sweden
Team—U.S.S.R.

Rowing

Eights—United States (Yale)
Fours with coxswain—Italy
Fours without coxswain—Canada
Pairs with coxswain—United States (Art Ayrault, Conn Findlay, Kurt Seiffert)
Pairs without coxswain—United States (James Fifer, Duval Hecht)
Double sculls—U.S.S.R. (Alexandre Berkoutov, Iuri Tiukalov)
Single sculls—Vyacheslav Ivanov, U.S.S.R.

Shooting

Free pistol—Pentti Limnosvuo, Finland
Clay pigeon—Galliano Rossini, Italy
Free rifle—Vassili Borissov, U.S.S.R.
Running deer—Vitali Romanenko, U.S.S.R.
Small bore rifle (prone, kneeling, standing)—Anatoli Bogdanov, U.S.S.R.
Rapid silhouette pistol—Stevan Petrescu, Rumania
Small bore rifle—Gerald Ouellette, Canada

Skiing

Spacial slalom—Toni Sailer, Austria
Giant slalom—Toni Sailer, Austria
Downhill—Toni Sailer, Austria
15-km. race—Hallgeir Brenden, Norway
30-km. race—Veikko Hakulin, Finland
50-km. race—Sixten Jernberg, Sweden
Nordic combined—Sverre Stenersen, Norway
40-km. relay—U.S.S.R.

WOMEN

Special slalom—Renee Colliard, Switzerland
Giant slalom—Ossi Reichert, Germany
Downhill—Madeleine Berthod, Switzerland
10-km. race—Lyubov Kozyreva, U.S.S.R.
15-km. relay—Finland

Weightlifting

Bantamweight—Charles Vinci, United States
Featherweight—Isaac Berger, United States
Lightweight—Igor Rybak, U.S.S.R.
Middleweight—Fedor Bogdanovski, U.S.S.R.
Light heavyweight—Tommy Kono, United States
Middle heavyweight—Arkadi Vorobiev, U.S.S.R.
Heavyweight—Paul Anderson, United States

Wrestling FREE STYLE

Flyweight—Marian Tsalkatmanidze, U.S.S.R.
Bantamweight—Mustafa Dagistanli, Turkey
Featherweight—Shoze Sasabara, Japan
Lightweight—Emamli Habibi, Iran
Welterweight—Mistro Ikeda, Japan
Middleweight—Nikolai Nikolov, Bulgaria
Light heavyweight—Gholam Takhti, Iran
Heavyweight—Hamid Kaplan, Turkey
Team—Turkey

GRECO-ROMAN

Flyweight—Nikolai Soloviev, U.S.S.R.
Bantamweight—Konstantin Vyropaeu, U.S.S.R.
Featherweight—Rauno Makinen, Finland
Lightweight—Kyosti Lehtonen, Finland
Welterweight—Mithat Bayrak, Turkey
Middleweight—Vuivi Kartoza, U.S.S.R.
Light heavyweight—Valentine Nikolaev, U.S.S.R.
Heavyweight—Anatoli Parfenov, U.S.S.R.
Team—U.S.S.R.

Yachting

5.5-meter class—Rush V, Sweden
Star class—Kathleen, United States
Dragon class—Slaghoken II, Sweden
Dinghy finn class—Paul Elvstrom, Denmark
Sharpie class—Jest, New Zealand

BASKETBALL

BASKETBALL may be unique in sports. It is one game concerning which it is safe to state when, where and how it originated. In the winter of 1891-92, Dr. James Naismith, an instructor in the Y.M.C.A. Training College (now Springfield College) at Springfield, Mass., deliberately invented the game of basketball in order to provide indoor exercise and competition for the students between the closing of the football season and the opening of the baseball season. He affixed peach baskets overhead on the walls at opposite ends of the gymnasium and, with an association (soccer) football, organized teams to play his new game in which the purpose was to toss the ball into one basket and prevent, as far as possible, the opponents from tossing the ball into the other basket. Fun-

damentally, the game is the same today, though there have been some improvements in equipment and many changes in the rules.

Because Dr. Naismith had eighteen available players when he invented the game, the first rule was: "There shall be nine players on each side." Later the number of players became optional, depending upon the size of the available court, but the five-player standard was adopted when the game spread over the country. United States soldiers introduced the game in Europe in World War I and, being taken up by foreign nations, it soon became a world-wide sport. An odd point is that, though it is still chiefly an indoor game in the United States, in other countries it flourishes almost entirely outdoors.

National Collegiate A. A. Champions

1939—Oregon	1948—Kentucky
1940—Indiana	1949—Kentucky
1941—Wisconsin	1950—C.C.N.Y.
1942—Stanford	1951—Kentucky
1943—Wyoming	1952—Kansas
1944—Utah	1953—Indiana
1945—Oklahoma A & M	1954—La Salle
1946—Oklahoma A & M	1955—San Francisco
1947—Holy Cross	1956—San Francisco

Professional Champions

The National Basketball League, formed in 1937, merged with the Basketball Association of America in the summer of 1949. Play in the B. A. A. started in 1946, with teams in ten cities. The current National Basketball Association is the result of the merger. The champions follow:

National League

1938—Goodyears
1939-40—Firestones
1941-42—Oshkosh
1943-45—Fort Wayne
1946—Rochester
1947—Chicago
1948—Minneapolis
1949—Anderson

Association of America

1947—Philadelphia
1948—Baltimore
1949—Minneapolis

National Association (NBA)

1950—Minneapolis
1951—Rochester
1952—Minneapolis
1953—Minneapolis
1954—Minneapolis
1955—Syracuse
1956—Philadelphia

National Invitation Champions

(Madison Square Garden Tourney)

1938—Temple	1948—St. Louis
1939—Long Island U.	1949—San Francisco
1940—Colorado	1950—C.C.N.Y.
1941—Long Island U.	1951—Brigham Young
1942—West Virginia	1952—La Salle (Phila.)
1943—St. John's (Bklyn.)	1953—Seton Hall
1944—St. John's (Bklyn.)	1954—Holy Cross
1945—DePaul	1955—Duquesne
1946—Kentucky	1956—Louisville
1947—Utah	

National A. A. U. Champions

1897—23d St. Y.M.C.A., New York
1899-1900—Knickerbocker A. C., New York
1901—Ravenswood Y.M.C.A., Chicago
1904—Buffalo (N. Y.) Y.M.C.A.
1910—Portage, Wis. National Guard
1913-14—Cornell (Armour Playground), Chicago
1915—San Francisco Olympic Club
1916—University of Utah
1917—Illinois A. C.
1919—Los Angeles A. C.
1920—New York University
1921—Kansas City A. C.
1922—Lowe and Campbell, Kansas City
1923—Kansas City A. C.
1924—Butler University
1925—Washburn College
1926-27—Hillyards, St. Joseph, Mo.
1928-29—Cook Paint Co., Kansas City
1930-32—Henry Clothiers, Wichita, Kan.
1933-34—Diamond DX Oilers, Tulsa, Okla.
1935—So. Kansas Stage Lines, Kansas City
1936—Globe Refiners, McPherson, Kan.
1937—Denver (Colo.) Safeways
1938—Healey Motors, Kansas City
1939—Denver (Colo.) Nuggets
1940—Phillips Oilers, Bartlesville, Okla.
1941—20th Century-Fox, Hollywood, Calif.
1942—American Legion, Denver, Colo.
1943-48—Phillips Oilers, Bartlesville, Okla.
1949—Oakland (Calif.) Bittners
1950—Phillips Oilers, Bartlesville, Okla.
1951—Stewart Chevrolets, San Francisco
1952-54—Caterpillar Diesels, Peoria, Ill.
1955—Phillips Oilers, Bartlesville, Okla.
1956—Buchan Bakers, Seattle

BOWLING

THE GAME OF bowling that is the favorite sport of millions of "keglers" in the United States is an indoor development of the more ancient outdoor game that survives as lawn bowling. The outdoor game is prehistoric in origin and probably goes back to Primitive Man and round stones that were rolled at some target. It is believed that a game something like nine-pins was popular among the Dutch, Swiss and Germans as long ago as A.D. 1200 at which time the game was played outdoors with an alley consisting of a single plank 12 to 18 inches wide along which was rolled a ball toward three rows of three pins each placed at the far end of the alley. When the first indoor alleys were built and how the game was modified from time to time are matters of dispute. Much of the confusion arises from a lack of certainty as to which game is meant, "bowls" or "bowling", one with a "jack" and the other with "pins", in historical passages.

It is supposed that the early settlers of New Amsterdam (New York City) being Dutch, they brought their two bowling games with them. About a century ago the game of nine-pins was flourishing in the United States but so corrupted by gambling on matches that it was barred by law in New York and Connecticut. Since the law specifically barred "nine-pins", it was eventually evaded by adding another pin and thus legally making it a new game. The genius who thought up that simple method of outwitting the law and putting a popular game in motion once more remained modestly anonymous. With the increase in the number of pins, the old diamond formation of nine-pins was abandoned for the triangle set-up of ten-pins that remains the rule to this day. Various organizations were formed to make rules for bowling and supervise competition in the United States but none was successful until the American Bowling Congress, organized Sept. 9, 1895, became the ruling body.

Bowling Statistics

Source: American Bowling Congress.

American Bowling Congress Tournament Records

Type of record	Holder and home city	Score	Year
High team total.....	Birk Bros., Chicago.....	3234	1938
High team game.....	Tea Shop, Milwaukee.....	1186	1927
High doubles total.....	Steve Nagy-John Klares, Cleveland.....	1453	1952
High doubles game.....	J. Gworek—H. Kmidowski, Buffalo.....	544	1946
High singles total.....	Lee Jougard, Detroit.....	775	1951
High all events total.....	Jim Spalding, Louisville, Ky.....	2088	1957
High 3 games in any event.....	Lee Jougard, Detroit.....	775	1951

AMERICAN BOWLING CONGRESS CHAMPIONS

Year	Singles	Score	Doubles	Score
1932	Otto Nitschke, Cleveland, Ohio.....	731	F. Benkovic—C. Daw, Milwaukee, Wis.....	1358
1933	Earl Hewitt, Erie, Pa.....	724	G. Zunker—F. Benkovic, Milwaukee, Wis.....	1415
1934	Jerry Vidro, Grand Rapids, Mich.....	721	G. Rudolph—J. Ryan, Waukegan, Ill.....	1321
1935	Don Brokaw, Canton, Ohio.....	733	C. Summerix—H. Souers, Akron, Ohio.....	1348
1936	Charles Warren, Springfield, Ill.....	735	A. Slanina—M. Straka, Chicago, Ill.....	1347
1937	Gene Gagliardi, Mt. Vernon, N. Y.....	749	V. Gibbs, Kansas City, Mo.—N. Burton, Dallas, Texas.....	1359
1938	Knute Anderson, Moline, Ill.....	746	D. Johnson—F. Snyder, Indianapolis, Ind.....	1337
1939	Jim Danek, Forest Park, Ill.....	730	P. Icuss—M. Fowler, Steubenville, Ohio.....	1405
1940	Ray Brown, Terre Haute, Ind.....	742	H. Freitag—J. Sinke, Chicago, Ill.....	1346
1941	Fred Ruff, Belleville, Ill.....	745	W. Lee—R. Farness, Madison, Wis.....	1346
1942	John Stanley, Cleveland, Ohio.....	756	E. Nowicki—G. Baier, Milwaukee, Wis.....	1377
1946	Leo Rollick, Los Angeles, Calif.....	737	J. Gworek—H. Kmidowski, Buffalo, N. Y.....	1366
1947	Junie McMahon, Chicago.....	740	Ed Doerr, Jr.—Len Springmeyer, St. Louis.....	1350
1948	Lincoln Protich, Akron, Ohio.....	721	J. Downs—W. Sweeney, Chicago.....	1361
1949	Bernard Rusche, St. Bernard, Ohio.....	716	D. Van Boxel, Green Bay—E. Bernhardt, Sturgeon Bay.....	1332
1950	Everett Leins, Aurora, Ill.....	757	W. Ebosh—E. Linsz, Cleveland.....	1325
1951	Lee Jougard, Detroit, Mich.....	775	Bob Benson—Ed Marshall, Lansing, Mich.....	1334
1952	Al Sharkey, Chicago.....	758	Steve Nagy-John Klares, Cleveland.....	1453
1953	Frank Santore, Long Island City, N. Y.....	749	Eddie Koep—Joe Kissoff, Cleveland.....	1339
1954	Tony Sparando, Rego Park, N. Y.....	723	Don McClaren, St. Louis—Billy Welu, Houston.....	1335
1955	Eddie Gerzine, Milwaukee.....	738	G. Pacropis—H. Zoeller, Wilkes Barre, Pa.....	1365
1956	George Wade, Steubenville, Ohio.....	744	Bill Lillard—Stan Gifford, Chicago.....	1331

American Bowling Congress Champions (cont.)

Year	All-events	Score	Team	Score
1934	Walt Reppenhagen, Detroit, Mich.	1972	Strohs, Detroit, Mich.	3089
1935	Ora Mayer, San Francisco, Calif.	2022	Wolfe Tire Service, Niagara Falls, N. Y.	3029
1936	John Murphy, Indianapolis, Ind.	2006	Falls City Hi-Bru, Indianapolis, Ind.	3089
1937	Max Stein, Belleville, Ill.	2070	Krakow Furniture, Detroit, Mich.	3118
1938	Don Beatty, Jackson, Mich.	1978	Birk Bros., Chicago, Ill.	3234
1939	Joe Wilman, Chicago, Ill.	2028	Fife Electric, Detroit, Mich.	3151
1940	Fred Fisher, Buffalo, N. Y.	2001	Monarch Beer, Chicago, Ill.	3047
1941	Harold Kelly, South Bend, Ind.	2013	Vogel Bros., Forest Park, Ill.	3065
1942	Stan Moskal, Saginaw, Mich.	1973	Budweiser, Chicago, Ill.	3131
1946	Joe Wilman, Chicago, Ill.	2054	Llo-da-mar Bowl, Santa Monica, Calif.	3023
1947	Junie McMahon, Chicago.	1965	Eddie and Earl Linsz, Cleveland, Ohio.	3032
1948	Ned Day, West Allis, Wis.	1979	Washington Shirts, Chicago.	3007
1949	John Small, Chicago.	1941	Jimmie Smith's, South Bend, Ind.	3027
1950	Frank Santore, Long Island City, N. Y.	1981	Pepsi-Cola, Detroit.	2952
1951	Tony Lindeman, Detroit.	2005	C. B. O'Malley Oldsmobile, Chicago.	3070
1952	Steve Nagy, Cleveland, Ohio.	2065	E & B Beer, Detroit, Mich.	3115
1953	Frank Santore, Long Island City, N. Y.	1994	Pfeiffer Beer, Detroit.	3181
1954	Brad Lewis, Ashland, Ohio.	1985	Tri-Par Radio, Chicago.	3226
1955	Fred Bujack, Detroit.	1993	Pfeiffer Beer, Detroit.	3136
1956	Bill Lillard, Chicago.	2018	Falstaff Brewery, Chicago.	3092

WOMAN'S INTERNATIONAL BOWLING CONGRESS CHAMPIONS

Source: Emma Phaler, Secretary, Woman's International Bowling Congress, Inc.

Year	Singles	Score	Doubles	Score
1934	Marie Clemensen, Chicago.	712	F. Trettin—D. McQuade, Chicago.	1190
1935	Marie Warmbier, Chicago.	652	E. Hauffler—B. Simon, San Antonio.	1219
1936	Mrs. Ella Burmeister, Madison, Wis.	612	Mrs. A. Lindermann—Mrs. L. Baldy, Milwaukee.	1116
1937	Mrs. Anna Gottstine, Buffalo.	647	L. Franke—G. Weber, Fort Wayne.	1230
1938	Mrs. Rose Warner, Waukegan, Ill.	622	F. Probert—E. Sablatnik, St. Louis.	1215
1939	Helen Hengstler, Detroit.	626	C. Powers—B. Reus, Grand Rapids.	1130
1940	Mrs. Sally Twyford, Aurora, Ill.	626	T. Morris—D. Burmeister Miller, Chicago.	1181
1941	Nancy Huff, Los Angeles.	662	J. Pittinger—M. J. Hogan, Los Angeles.	1155
1942	Tillie Taylor, Newark, N. J.	659	S. Hartrick—C. Allen, Detroit.	1204
1946	Val Mikiel, Detroit.	682	V. Focazio—P. Dusher, Niagara Falls, N. Y.	1251
1947	Agnes Junker, Indianapolis, Ind.	650	Candice Miller—E. Beard, Ft. Wayne, Ind.	1245
1948	Shirlee Wernecke, Chicago.	696	M. Cass, Alhambra—M. Mathews, Long Beach, Calif.	1188
1949	Clara Mataya, St. Louis.	658	Ann Elyasevich—Estelle Svoboda, Chicago.	1229
1950	Cleo Stalkamp, Newport, Ky.	669	Shirley Gantenbein—Flo Schick, Dallas.	1216
1951	Ida Simpson, Buffalo, N. Y.	639	Esther Cook—Alma Denini, Seattle.	1179
1952	Lorene Craig, Kansas City, Mo.	672	Lorraine Quam—Martha Hoffman, Madison, Wis.	1206
1953	Marge Baginski, Berwyn, Ill.	637	Doris Knechtges—Jane Grudzien, Detroit.	1211
1954	Mrs. Helen Martin, Peoria, Ill.	668	Frances Stennett—Rose Gaciach, Rockford, Ill.	1244
1955	Nellie Vella, Rockford, Ill.	695	Wyllis Ryskamp—Mrs. M. Ladewig, Grand Rapids.	1264
1956	Lucille Noe, Columbus, Ohio.	708	Betty Maw—Mary Quinn, Buffalo, N. Y.	1242

Year	All-events	Score	Team	Score
1934	Mrs. Esther Ryan, Milwaukee.	1763	Tommy Dolls Five, Cincinnati.	2616
1935	Marie Warmbier, Chicago.	1911	Alberti Jewelers, Chicago.	2765
1936	Mrs. Ella Burmeister, Madison, Wis.	1683	Easty Five, Cleveland.	2617
1937	Mrs. Louise Stockdale, Detroit.	1761	The Heil Uniform Heat, Milwaukee.	2685
1938	Dorothy Burmeister, Chicago.	1843	The Heil Uniform Heat, Milwaukee.	2706
1939	Ruth Troy, Dayton, Ohio.	1724	Kornitz Pure Oil, Milwaukee.	2618
1940	Mrs. Tess Morris, Chicago.	1777	Logan Square Buicks, Chicago.	2689
1941	Mrs. Sally Twyford, Aurora, Ill.	1799	Rockvick Bowling Shoes, Chicago.	2661
1942	Nina Van Camp, Chicago.	1888	Logan Square Buicks, Chicago.	2815
1946	Catherine Fellmeth, Chicago.	1835	Silver Seal Soda, St. Louis.	2721
1947	Marge Dardeen, Cincinnati.	1826	Kornitz Pure Oil, Milwaukee.	2987
1948	Virgie Hupfer, Burlington, Iowa.	1850	Kathryn Creme Pact, Chicago.	2812
1949	Cecelia Winandy, Chicago.	1840	Gears by Enterprise, Detroit.	2786
1950	Marion Ladewig, Grand Rapids, Mich.	1796	Fanitorium Majors, Grand Rapids, Mich.	2903
1951	LaVerne Haverley, Los Angeles.	1788	Hickman Oldsmobile Whirlaway, Indianapolis.	2705
1952	Mrs. Virginia Turner, Gardena, Calif.	1854	Cole Furniture, Cleveland.	2854
1953	Doris Knechtges, Detroit.	1886	B. & B. Chevrolet, Detroit.	2931
1954	Anne Johnson, Hazleton, Pa.	1880	Marhoefer Weiners, Chicago.	2734
1955	Mrs. Marion Ladewig, Grand Rapids, Mich.	1890	Falstaff, Chicago.	2991
1956	Doris Knechtges, Detroit.	1867	Daniel Ryan, Chicago.	2880

DUCK PINS

Source: A. L. Ebersole, Executive Secretary, National Duck Pin Bowling Congress.

WORLD RECORDS (MEN)

Individual

Event and record holder	Score
Single game—Eddie Funaro, New Haven, Conn.	239
3-game set—Arthur Lemke, Lowell, Mass.	542
4-game set—James Deitsch, Baltimore	624
5-game set—Larkin Wedson, Washington	786
6-game set—Andy Eriar, Fall River, Mass.	914
7-game set—Howard Parsons, Washington, D. C.	1,091
8-game set—John Hundertmark, Baltimore	1,199
9-game set—Mike Litrenta, Baltimore	1,339
10-game set—Winnie Guerke, Baltimore	1,482
Season average—Nick Tronsky, New Britain, Conn.	134-14

Doubles

Single game—W. Christiano-J. Silk, Norwalk, Conn.	352
3-game set—M. Avon-P. Jarman, Washington, D. C.	929
4-game set—Dawson Snyder-James Rosenberger, Baltimore	1,122
5-game set—Andy Page-Gene Sirbaugh, Atlanta, Ga.	1,428
6-game set—N. Hamilton-W. Guerke, Baltimore	1,624
7-game set—S. Witkowski, Middletown, Conn.	1,938
8-game set—E. Campbell-L. Selin, Annapolis, Md.	2,128
9-game set—N. Hamilton-W. Guerke, Baltimore	2,431
10-game set—J. Dietsch-J. Weinkam, Baltimore	2,752
Season average—H. Hipsley-J. Dietsch, Baltimore	254-10

Teams

Single game—Winchester Packard, Washington, D. C.	797
3-game set—National Premium Beer, Baltimore	2,135
5-game set—Kelly Buick, Baltimore	3,348
10-game set—Park Circle Motor, Baltimore	6,460
15-game set—Popular Club-Recreation, Baltimore	9,420
Consecutive wins—Franks Tavern, Washington, D. C.	33
Season average—National Beer, Baltimore	638-42
3-man game—Middletown (Conn.) All-Stars	475
3-man set—Huguey's Bethesda (Md.) Stars	1,249
3-man 5-game set—C. Hildebrand, E. Pickus, N. Hamilton, Baltimore	1,957

WORLD RECORDS (WOMEN)

Individual

Event and record holder	Score
Single game—Vivian Walsh, Washington	232
3-game set—Minerva Weisenborn, Baltimore	471
4-game set—Ruth Kratz, Baltimore	569
5-game set—Elizabeth Barger, Baltimore, Md.	745
6-game set—Ida Simmons, Norfolk, Va., and Joan Nuessele, Baltimore (tie)	835
7-game set—Elizabeth Barger, Baltimore	997
8-game set—Ethel Dize, Baltimore	1,057
9-game set—Maxine Allen, Durham, N. C.	1,231
10-game set—Ida Simmons, Norfolk, Va.	1,355
Season average—Ida Simmons Slack	124-15

Doubles

Single game—Hazel Wells-Ruby Hovanic, Bridgeport, Conn.	338
3-game set—A. Levy-D. Smith, Norfolk, Va.	798
4-game set—E. Brose-T. McDonough, Baltimore	966
5-game set—E. Barger-E. Dize, Baltimore	1,298
6-game set—I. Simmons-E. Leib, Baltimore	1,458
7-game set—E. Traber-M. Cleveland, Atlanta, Ga.	1,694
8-game set—T. McDonough-E. Brose, Baltimore	1,905
9-game set—I. Simmons-E. Leib, Baltimore	2,139
10-game set—E. Barger-E. Dize, Baltimore	2,572
Season average—N. Zimmerman-M. Tuckey, Baltimore	217

Teams

Single game—Devon All-Star Girls, Devon, Conn.	721
3-game set—Star Laundry Girls, Norwalk, Conn.	1,965
5-game set—Pine Grove Dairy, Portsmouth, Va.	3,094
10-game set—Evening Star Champions, Washington, D. C.	5,438
Season average—Aristocrat Dairy, Baltimore	578-0
Consecutive wins—Bookies, Richmond, Va.	37
3-woman 7-game set—I. Simmons, J. White, E. Leib, Baltimore	2,433

SKI JUMPING

UNITED STATES RECORDS

Source: Harold A. Grinden, Historian, National Ski Association of America, Duluth, Minn.

Year	Made by and place	Distance, in feet
1887	Mikkel Hemmestvedt, Red Wing, Minn.	37
1904	T. Walters, Ishpeming, Mich.	82
1905	J. Kulstadt, Ishpeming, Mich.	92½
1907	Ole Feiring, Duluth, Minn.	112
1907	Ole Mangseth, Red Wing, Minn.	114
1908	John Evenson, Duluth, Minn.	116
1908	John Mangseth, Duluth, Minn.	117
1908	John Evenson, Ishpeming, Mich.	122
1909	Ole Larson, Eau Claire, Wis.	131
1910	Oscar Gunderson, Chippewa Falls, Wis.	138
1910	August Nordby, Ishpeming, Mich.	140
1911	Anders Haugen, Ironwood, Mich.	152
1913	Ragnar Omtvedt, Ironwood, Mich.	154-158-169
1916	Ragnar Omtvedt, Steamboat Springs, Colo.	192½
1917	Henry Hall, Steamboat Springs, Colo.	203
1919	Anders Haugen, Dillon, Colo.	213
1919	Lars Haugen, Steamboat Springs, Colo.	214
1920	Anders Haugen, Dillon, Colo.	214
1932	Glen Armstrong, Salt Lake City	224
1934	John Elvrum, Big Pines, Calif.	240
1937	Alf Engen, Salt Lake City, Utah	244.42

Year	Made by and place	Distance, in feet
1939	Alf Engen, Big Pines, Calif.	251
1939	Bob Roecker, Iron Mountain, Mich.	257
1941	Torger Tokle, Leavenworth, Wash.	273
1941	Torger Tokle, Olympian Hill, Hyak, Wash.	288
1942	Torger Tokle, Iron Mountain, Mich.	289
1949	Sverre Kongsgaard, Hyak, Wash.	290
1949	Joe Perrault, Iron Mountain, Mich.	297
1951	Anten Samuelstuen, Steamboat Springs	316

U. S. RECORDS BY CLASSES

Class A—Anten Samuelstuen, Norway, at Steamboat Springs, Colo., Feb. 18, 1951.	316
Class B—Fred Murphy, Duluth (Minn.) Ski Club, at Steamboat Springs, Colo., Feb. 25, 1950.	286
Class C (Junior A)—Marvin Crawford, Steamboat Winter Sports Club, at Steamboat Springs, Colo., Feb. 25, 1950.	290
Veterans (32 and over)—Lloyd Severude, Eau Claire Winter Sports Club, at Steamboat Springs, Colo., Feb. 14, 1953.	257

ATHLETES OF THE YEAR

The Associated Press annually polls outstanding sportswriters and broadcasters throughout the nation to select the outstanding male and female athletes of the year. The winners since 1931:

MALE

Year	Athlete	Sport
1931	Pepper Martin	Baseball
1932	Gene Sarazen	Golf
1933	Carl Hubbell	Baseball
1934	Dizzy Dean	Baseball
1935	Joe Louis	Boxing
1936	Jesse Owens	Track and field
1937	Don Budge	Tennis
1938	Don Budge	Tennis
1939	Nile Kinnick	Football
1940	Tommy Harmon	Football
1941	Joe DiMaggio	Baseball
1942	Frank Sinkwich	Football
1943	Gunder Hagg	Track
1944	Byron Nelson	Golf
1945	Byron Nelson	Golf
1946	Glenn Davis	Football
1947	Johnny Lujack	Football
1948	Lou Boudreau	Baseball
1949	Leon Hart	Football
1950	Jim Konstanty	Baseball
1951	Dick Kazmaier	Football
1952	Bob Mathias	Track and field
1953	Ben Hogan	Golf
1954	Willie Mays	Baseball
1955	Howard (Hopalong) Cassady	Football
1956	Mickey Mantle	Baseball

FEMALE

Year	Athlete	Sport
1931	Helene Madison	Swimming
1932	Mildred (Babe) Didrikson	Track and field
1933	Helen Jacobs	Tennis
1934	Virginia Van Wie	Golf
1935	Helen Wills Moody	Tennis
1936	Helen Stephens	Track
1937	Katherine Rawls	Swimming
1938	Patty Berg	Golf
1939	Alice Marble	Tennis
1940	Alice Marble	Tennis
1941	Betty Hicks Newell	Golf
1942	Gloria Callen	Swimming
1943	Patty Berg	Golf
1944	Ann Curtis	Swimming
1945	Mildred (Babe) Didrikson Zaharias	Golf
1946	Mildred (Babe) Didrikson Zaharias	Golf
1947	Mildred (Babe) Didrikson Zaharias	Golf
1948	Fanny Blankers-Koen	Track
1949	Marlene Bauer	Golf
1950	Mildred (Babe) Didrikson Zaharias	Golf
1951	Maureen Connolly	Tennis
1952	Maureen Connolly	Tennis
1953	Maureen Connolly	Tennis
1954	Mildred (Babe) Didrikson Zaharias	Golf
1955	Patty Berg	Golf
1956	Patricia McCormick	Diving

SULLIVAN AWARD WINNERS

The James E. Sullivan Memorial Award is given annually to the amateur athlete voted by sports leaders as having done the most to advance sportsmanship.

Year	Winner	Sport
1930	Robert T. Jones, Jr.	Golf
1931	Bernard E. Berlinger	Track and field
1932	James A. Bausch	Track and field
1933	Glenn Cunningham	Running
1934	William R. Bonthron	Running
1935	W. Lawson Little, Jr.	Golf
1936	Glenn Morris	Track and field
1937	J. Donald Budge	Tennis
1938	Donald R. Lash	Running
1939	Joseph W. Burk	Rowing
1940	J. Gregory Rice	Running
1941	Leslie MacMitchell	Running
1942	Cornelius Warmerdam	Pole vaulting
1943	Gilbert L. Dodds	Running
1944	Ann Curtis	Swimming
1945	Felix (Doc) Blanchard	Football
1946	Y. Arnold Tucker	Football
1947	John B. Kelly, Jr.	Rowing
1948	Robert B. Mathias	Track and field
1949	Richard T. Button	Figure skating
1950	Fred Wilt	Running
1951	Robert E. Richards	Track and field
1952	Horace Ashenfelter	Running
1953	Major Sammy Lee	Diving
1954	Malvin Whitfield	Track
1955	Harrison Dillard	Track
1956	Patricia McCormick	Diving

HICKOK AWARD WINNERS

The richest award in sports is the \$10,000 S. Rae Hickok Belt, which annually goes to the professional athlete of the year, as selected in a poll of sportswriters and sportscasters throughout the country. The winners:

- 1950—Phil Rizzuto (baseball)
- 1951—Allie Reynolds (baseball)
- 1952—Rocky Marciano (boxing)
- 1953—Ben Hogan (golf)
- 1954—Willie Mays (baseball)
- 1955—Otto Graham (football)
- 1956—Mickey Mantle (baseball)

TOP ATHLETES OF A HALF-CENTURY

In 1950 The Associated Press polled the nation's sports experts on the "greats" in various fields during the past half-century. The list of winners:

- Male athlete—Jim Thorpe.
- Female athlete—Mildred D. Zaharias.
- Baseball player—Babe Ruth.
- Football player—Jim Thorpe.
- Fighter—Jack Dempsey.
- Basketball player—George Mikan.
- Track performer—Jesse Owens.
- Golfer—Bobby Jones.
- Tennis player—Bill Tilden.
- Swimmer—Johnny Weissmuller.
- Race horse—Man o' War.
- Greatest upset—The Boston Braves' four-straight world series victory over the Philadelphia Athletics in 1914.

BADMINTON

United States Champions

Men's Singles

Year

Men's Doubles

Walter R. Kramer, Detroit, Mich....	1937..	Chester Goss—Donald Eversoll, Los Angeles, Calif.
Walter R. Kramer, Detroit, Mich....	1938..	Hamilton Law—Richard Yeager, Seattle, Wash.
David G. Freeman, Pasadena, Calif....	1939..	Hamilton Law—Richard Yeager, Seattle, Wash.
David G. Freeman, Pasadena, Calif....	1940..	Chester Goss—David G. Freeman, Pasadena, Calif.
David G. Freeman, Pasadena, Calif....	1941..	Chester Goss—David G. Freeman, Pasadena, Calif.
David G. Freeman, Pasadena, Calif....	1942..	Chester Goss—David G. Freeman, Pasadena, Calif.
David G. Freeman, Pasadena, Calif....	1947..	D. G. Freeman—Webster Kimball, Pasadena, Calif.
David G. Freeman, Pasadena, Calif....	1948..	Wynn Rogers, Arcadia, Calif.—D. G. Freeman.
Marten Mendez, San Diego, Calif....	1949..	Barney McCay, Pasadena—Wynn Rogers, Arcadia.
Marten Mendez, San Diego, Calif....	1950..	Barney McCay, Pasadena—Wynn Rogers, Arcadia.
Joseph Alston, San Diego, Calif....	1951..	Wynn Rogers, Arcadia—Joseph Alston
Marten Mendez, San Diego, Calif....	1952..	Joseph Alston, Fargo, N. D.—Wynn Rogers
David G. Freeman, Pasadena, Calif....	1953..	Joseph Alston, Detroit—Wynn Rogers
Eddy Choong, Malaya.....	1954..	Ooi Teik Hock—Ong Poh Lim, Malaya
J. Alston, So. Pasadena, Calif.	1955..	Wynn Rogers, Arcadia, Calif.—Joseph Alston
Finn Kobbero, Denmark	1956..	Finn Kobbero—J. Hammergaard, Denmark

Women's Singles

Women's Doubles

Mrs. Del Barkhuff, Seattle, Wash....	1937..	Mrs. Del Barkhuff—Zoe G. Smith, Seattle, Wash.
Mrs. Del Barkhuff, Seattle, Wash....	1938..	Mrs. Roy C. Bergman—Helen Gibson, Westport, Conn.
Mary E. Whittemore, Boston, Mass....	1939..	Mrs. Del Barkhuff—Zoe G. Smith, Seattle, Wash.
Evelyn Boldrick, San Diego, Calif....	1940..	Elizabeth Anselm—Helen Zabriskie, Oakland, Calif.
Thelma Kingsbury, Oakland, Calif....	1941..	Thelma Kingsbury—Janet Wright, Oakland, Calif.
Evelyn Boldrick, San Diego, Calif....	1942..	Evelyn Boldrick, San Diego—Janet Wright, Oakland, Calif.
Ethel Marshall, Buffalo, N. Y.....	1947..	Thelma K. Scovill—Janet Wright, San Francisco.
Ethel Marshall, Buffalo, N. Y.....	1948..	Thelma K. Scovill—Janet Wright, San Francisco.
Ethel Marshall, Buffalo, N. Y.....	1949..	Thelma K. Scovill—Janet Wright, San Francisco.
Ethel Marshall, Buffalo, N. Y.....	1950..	Thelma K. Scovill—Janet Wright, San Francisco.
Ethel Marshall, Buffalo, N. Y.....	1951..	Dottie Hann, Manhattan Beach, Calif.—Mrs. L. M. Smith
Ethel Marshall, Buffalo, N. Y.....	1952..	Ethel Marshall—Beatrice Massman, Buffalo, N. Y.
Ethel Marshall, Buffalo, N. Y.....	1953..	Judith Devlin—Susan Devlin, Baltimore
Judith Devlin, Baltimore.....	1954..	Judith Devlin—Susan Devlin, Baltimore
Margaret Varner, Boston	1955..	Judith Devlin—Susan Devlin, Baltimore
Judith Devlin, Baltimore.....	1956..	Ethel Marshall—Bea Massman, Buffalo, N. Y.

TABLE TENNIS

United States Champions

MEN'S SINGLES

1931	Marcus Schussheim, New York
1932	Coleman Clark, Chicago*
	Marcus Schussheim, New York*
1933	James M. Jacobson, New Rochelle, N. Y.
	Sidney Heitner, New York*
1934	James McClure, Indianapolis*
	Sol Schiff, New York*
1935	A. Berenbaum, New York
1936	Viktor Barna, Hungary†
	Sol Schiff, New York†
1937	Laszlo Bellak, Hungary†
1938	Laszlo Bellak, Hungary
1939	James McClure, Indianapolis
1940-42	Louis Pagliaro, New York
1943	William Holzrichter, Chicago
1944	John Somael, New York
1945-49	Richard Miles, New York
1950	John Leach, England
1951	Richard Miles, New York
1952	Louis Pagliaro, New York
1953-55	Richard Miles, New York
1956	Erwin Klein, Los Angeles

MEN'S DOUBLES

1932	James M. Jacobson-George T. Bacon, Jr., New Rochelle.
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* Co-champions. At the time there were two national associations, each with its own champion. † Open championships. ‡ Closed championships.

1933	Paul Pearson-Edwin Lewis, Chicago*
	Ralph Langsam-Lloyd Watson, New York*
1934	Samuel Silberman-Alan Lobell, New York*
	Sol Schiff, N. Y.-Manny Moskowitz, Rutherford, N. J.*
1935	A. Berenbaum, N. Y.-Edward Silverglade, Trenton, N. J.
1936	James McClure, Indianapolis-Robert Blattner, St. Louis†
	James M. Jacobson, New Rochelle, N. Y.-Sol Schiff, New York†
1937	Laszlo Bellak, Hungary-Standa Kolar, Czechoslovakia†
1938	Sol Schiff, New York-James McClure, Indianapolis
1939	Laszlo Bellak-Tibor Hazi, Hungary
1940	Sol Schiff, New York-James McClure, Indianapolis
1941-42	Edward Pinner-Cy Sussman, New York
1943	Laszlo Bellak, New York-Tibor Hazi, Philadelphia
1944	William Holzrichter, Chicago-Laszlo Bellak, N. Y.
1945	John Somael, New York-Max Hersh, Detroit
1946	Edward Pinner-Cy Sussman, New York
1947	Douglas Cartland-Arnold Fetbrod, New York
1948	Tibor Hazi, Washington-John Somael, New York
1949	Martin Reisman-Sol Schiff, New York
1950	John Leach-Jack Carrington, England
1951	M. Reisman, N. Y.-W. Holzrichter, Chicago
1952	Richard Miles-Sol Schiff, New York
1953	Richard Miles-John Somael, New York
1954	Bernard Bukiet, Chicago-Tibor Hazi, Washington
1955-56	R. Bergmann, England-E. Klein, Los Angeles

FENCING

Source: Amateur Fencers League of America.

NATIONAL CHAMPIONS

Year	Foil	Épée	Saber	Women's foil
1892	W. S. O'Connor	B. F. O'Connor	R. O. Haubold	
1893	W. T. Heintz	G. M. Hammond	G. M. Hammond	
1894	C. G. Bothner	R. O. Haubold	G. M. Hammond	
1895	A. V. Z. Post	C. G. Bothner	C. G. Bothner	
1896	G. Kavanaugh	A. V. Z. Post	C. G. Bothner	
1897	C. G. Bothner	C. G. Bothner	C. G. Bothner	
1899	G. Kavanaugh	M. Diaz	G. Kavanaugh	
1900	F. Townsend	W. D. Lyon	J. L. Erving	
1901	C. Tatham	C. Tatham	A. V. Z. Post	
1902	J. P. Parker	C. Tatham	A. V. Z. Post	
1903	F. Townsend	C. Tatham	A. V. Z. Post	
1904	C. G. Bothner	C. G. Bothner	A. G. Anderson	
1905	C. G. Bothner	W. S. O'Connor	K. B. Johnson	
1906	S. D. Breckinridge	W. Grebe	A. G. Anderson	
1907	C. Waldbott	W. D. Lyon	A. G. Anderson	
1908	W. L. Bowman	P. Benzenberg	G. W. Postgate	
1909	O. A. Dickinson	A. De La Poer	A. E. Sauer	
1910	G. K. Bainbridge	A. De La Poer	J. T. Shaw	
1911	G. H. Breed	G. H. Breed	A. G. Anderson	
1912	S. Hall	A. V. Z. Post	C. A. Bill	A. Baylis
1913	P. J. Meylan	A. E. Sauer	A. G. Anderson	Mrs. W. H. Dewar
1914	S. D. Breckinridge	F. W. Allen	W. Von Blijenburgh	M. Stimson
1915	O. A. Dickinson	J. A. MacLaughlin	S. Hall	J. Pyle
1916	A. E. Sauer	W. H. Russell	S. Hall	Mrs. C. H. Woorhees
1917	S. Hall	L. G. Nunes	A. S. Lyon	F. Walton
1918	No competition			
1919	S. Hall	W. H. Russell	A. S. Lyon	No competition
1920	S. Hall	R. W. Dutcher	S. Hall	A. Gehrig
1921	F. W. Honeycutt	C. R. McPherson	C. R. McPherson	A. Gehrig
1922	H. M. Raynor	L. G. Nunes	L. G. Nunes	A. Gehrig
1923	R. Peroy	G. C. Calnan	L. M. Schoonmaker	A. Gehrig
1924	L. G. Nunes	L. G. Nunes	J. E. Gignoux	Mrs. C. H. Hopper
1925	G. C. Calnan	W. H. Russell	J. Vince	Mrs. L. M. Schoonmaker
1926	G. C. Calnan	L. G. Nunes	L. G. Nunes	Mrs. L. M. Schoonmaker
1927	G. C. Calnan	H. Van Buskirk	N. Muray	S. Stern
1928	G. C. Calnan	L. G. Nunes	N. Muray	M. Lloyd
1929	J. L. Lewis	F. S. Righeimer	L. G. Nunes	Mrs. L. M. Schoonmaker
1930	G. C. Calnan	M. Pasche	N. C. Armitage	Mrs. H. Van Buskirk
1931	G. C. Calnan	M. A. de Capriles	J. R. Huffman	M. Lloyd
1932	J. L. Lewis	L. G. Nunes	J. R. Huffman	D. Locke
1933	J. L. Lewis	G. M. Heiss	J. R. Huffman	D. Locke
1934	H. V. Alessandrini	G. M. Heiss	N. C. Armitage	H. Mayer
1935	J. L. Lewis	T. J. Sands	N. C. Armitage	H. Mayer
1936	H. V. Alessandrini	G. M. Heiss	N. C. Armitage	Mrs. J. de Tuscan
1937	J. L. Lewis	T. J. Sands	J. R. Huffman	H. Mayer
1938	D. Every	J. R. de Capriles	J. R. Huffman	H. Mayer
1939	N. Lewis	L. Tingley	N. C. Armitage	H. Mayer
1940	D. Every	F. W. Siebert	N. C. Armitage	H. Mroczkowska
1941	D. Cetrulo	G. M. Heiss	N. C. Armitage	H. Mayer
1942	W. Dow	H. Santos	N. C. Armitage	H. Mayer
1943	W. Dow	R. Driscoll	N. C. Armitage	H. Mroczkowska
1944	A. Snyder	M. A. de Capriles	Tibor Nyilas	M. Dalton
1945	D. Every	M. Gilman	N. C. Armitage	M. Cerra
1946	J. R. de Capriles	A. Wolff	Tibor Nyilas	H. Mayer
1947	Dean Cetrulo	James Strauch	James Flynn	Mrs. Helena Dow
1948	Nathaniel Lubell	Norman Lewis	Dean Cetrulo	Mrs. Helena Dow
1949	Daniel Bukantz	Norman Lewis	Umberto Martino	Polly Craus
1950	Silvio Giolito	Norman Lewis	Tibor Nyilas	Janice-Lee York
1951	Silvio Giolito	J. R. de Capriles	Tibor Nyilas	Janice-Lee York
1952	Daniel Bukantz	Abelardo Menendez	Tibor Nyilas	Mrs. Maxine Mitchell
1953	Daniel Bukantz	Donald Thompson	Tibor Nyilas	Paula Sweeney
1954	Joseph L. Lewis	Sewell Shurtz	George Worth	Mrs. Maxine Mitchell
1955	Albert Axelrod	Abram Cohen	Richard Dyer	Mrs. Maxine Mitchell
1956	Sewall Shurtz	Abram Cohen	Tibor Nyilas	Janice Lee Romary

ROWING

ROWING goes back so far in history that there is no possibility of tracing it to any particular aboriginal source. The oldest rowing race still on the calendar is the "Doggett's Coat and Badge" contest among professional watermen of the Thames (England) that began in 1715. The first Oxford-Cambridge race was held at Henley in 1829. Competitive rowing in the United States began with matches between boats rowed by professional oarsmen of the New York water front. They were oarsmen who rowed the small boats that plied as ferries from Manhattan Island to Brooklyn and return, or who rowed salesmen down the harbor to meet ships arriving from Europe. Since the first salesman to meet an incoming ship had some advantage over his rivals, there was keen competition in the bidding for fast boats and the best oarsmen. This gave rise to match races for a purse or a side bet on many occasions. The first of such races was held in June, 1811, in four-oared gigs.

Amateur boat clubs sprang up in the United States between 1820 and 1830 and

seven students of Yale joined together to purchase a four-oared lap-streak gig in 1843. The first Harvard-Yale race was held Aug. 3, 1852, on Lake Winnepesaukee, N. H. The first time an American college crew went abroad was in 1869 when Harvard challenged Oxford and was defeated on the Thames. There were early college rowing races on Lake Quinsigamond, near Worcester, Mass., and on Saratoga Lake, N. Y., but the Intercollegiate Rowing Association, in 1895, settled on the Hudson, at Poughkeepsie, as the setting for the annual "Poughkeepsie Regatta." In 1950 the I.R.A. shifted its classic to Marietta, Ohio, and in 1952 it was moved to Syracuse, N. Y. The National Association of Amateur Oarsmen, organized in 1872, has conducted annual championship regattas since that time. The first rowing races were held with lap-streak gigs but shells came into general favor about a century ago. The outrigger was invented in 1830 by Clasper, an Englishman. Yale used the sliding seat in 1870.

Rowing Statistics

Source: From *American Rowing*, Copyright by Robert F. Kelley; courtesy of G. P. Putnam's Sons.

Yale-Harvard Varsity Race Record

Rowed at Centre Harbor, N. H., in 1852; Springfield, Mass., in 1855, 1872-73, 1876-77; Worcester, Mass., 1859 to 1870; Saratoga Lake, N. Y., 1874-75; New London, Conn., 1873 to 1895, 1898 to 1916, 1919 to 1941, and since 1947; triangular race at Poughkeepsie, N. Y., in 1897 with Cornell victor in 20:34; Derby, Conn., in 1918, 1942, and Boston, Mass., in 1946. Course was 2 miles in 1852; 3 miles from 1855 to 1875, and 4 miles thereafter.

Year	Winner	Time	Year	Winner	Time	Year	Winner	Time
1852	Harvard	1	1892	Yale	20:48	1924	Yale	21:58½
1855	Harvard	22:00	1893	Yale	25:01½	1925	Yale	20:26
1859	Harvard	19:18	1894	Yale	23:45½	1926	Yale	20:14½
1860	Harvard	18:53	1895	Yale	21:30	1927	Harvard	22:35½
1864	Yale	19:01	1897	Yale	20:44	1928	Yale	20:21½
1865	Yale	18:42½	1898	Yale	24:02	1929	Yale	21:20
1866	Harvard	18:43½	1899	Harvard	20:52½	1930	Yale	20:09½
1867	Harvard	18:12½	1900	Yale	21:12½	1931	Harvard	22:21
1868	Harvard	17:48½	1901	Yale	23:37	1932	Harvard	21:29
1869	Harvard	18:02	1902	Yale	20:20	1933	Harvard	22:46½
1870	Harvard	20:30 ⁴	1903	Yale	20:19½	1934	Yale	19:51½
1872	Harvard	16:57	1904	Yale	21:40½	1935	Yale	20:19
1873	Yale	16:59	1905	Yale	22:33½	1936	Harvard	20:19
1874 ⁴	Harvard	16:56	1906	Harvard	23:02	1937	Harvard	20:02
1875	Harvard	17:05	1907	Yale	21:10	1938	Harvard	20:20
1876	Yale	22:02	1908 ⁴	Harvard	24:10	1939	Harvard	20:48½
1877	Harvard	24:36	1909	Harvard	21:50	1940	Harvard	21:38
1878	Harvard	20:44½	1910	Harvard	20:46½	1941	Harvard	20:40
1879	Harvard	22:15	1911	Harvard	22:44	1942 ⁷	Harvard	10:09½
1880	Yale	24:27	1912	Harvard	21:43½	1946 ⁸	Harvard	9:18
1881	Yale	22:13	1913	Harvard	21:42	1947	Harvard	20:40
1882	Harvard	20:47½	1914	Yale	21:16	1948 ⁹	Harvard	19:21½
1883	Harvard	25:46½	1915	Yale	20:52	1949 ¹⁰	Yale	19:52½
1884	Yale	20:31	1916	Harvard	20:02	1950	Harvard	21:36½
1885	Harvard	25:15½	1918 ⁴	Harvard	10:58	1951	Harvard	21:26
1886	Yale	20:42	1919 ⁴	Yale	21:42½	1952	Yale	22:49
1887	Yale	22:56	1920	Harvard	23:11	1953	Harvard	20:09
1888	Yale	20:10	1921	Yale	20:41	1954	Yale	21:58½
1889	Yale	21:30	1922	Yale	21:53	1955	Yale	20:05
1890	Yale	21:29	1923	Yale	22:10	1956	Yale	19:26
1891	Harvard	21:23						

¹ Harvard won by 3 to 4 lengths. ² Yale ran into Harvard at turn and was disqualified. ³ Yale did not finish, being disabled in collision. ⁴ Yale stroke taken from shell near 3-mile mark. ⁵ Race was informal; rowed at 2 miles on Housatonic. ⁶ Course was 110 feet less than 4 miles. ⁷ Rowed at 2 miles. ⁸ Rowed at 1½ miles. ⁹ Both crews broke downstream record. ¹⁰ Both crews broke upstream record.

INTERCOLLEGIATE ROWING ASSOCIATION REGATTA

(Varsity eight-oared shells)

Rowed at 4 miles, Poughkeepsie, N. Y., 1895-97, 1899-1916, 1925-32, 1934-41. Rowed at 3 miles, Saratoga, N. Y., 1898; Poughkeepsie, 1921-24, 1947-49; Syracuse, N. Y., since 1952. Rowed at 2 miles, Ithaca, N. Y., 1920; Marietta, Ohio, 1950-51. Racing suspended 1917-19, 1933, 1942-46.

Year	Time	First	Second	Third	Fourth	Fifth	Sixth
1895	21:25	Columbia	Cornell	Pennsylvania			
1896	19:59	Cornell	Harvard	Pennsylvania	Columbia		
1897	20:47 4/5	Cornell	Columbia	Pennsylvania			
1898	15:51 1/2	Pennsylvania	Cornell	Wisconsin	Columbia		
1899	20:4	Pennsylvania	Wisconsin	Cornell	Columbia		
1900	19:44 3/5	Pennsylvania	Wisconsin	Cornell	Columbia	Georgetown	
1901	18:53 1/5	Cornell	Columbia	Wisconsin	Georgetown	Syracuse	Pennsylvania
1902	19:5 3/5	Cornell	Wisconsin	Columbia	Pennsylvania	Syracuse	Georgetown
1903	18:57	Cornell	Georgetown	Wisconsin	Pennsylvania	Syracuse	Columbia
1904	20:22 3/5	Syracuse	Cornell	Pennsylvania	Columbia	Georgetown	Wisconsin
1905	20:29	Cornell	Syracuse	Georgetown	Columbia	Pennsylvania	Wisconsin
1906	19:36 4/5	Cornell	Pennsylvania	Syracuse	Wisconsin	Columbia	Georgetown
1907	20:2 2/5	Cornell	Columbia	Navy	Pennsylvania	Wisconsin	Georgetown
1908	19:24 1/5	Syracuse	Columbia	Cornell	Pennsylvania	Wisconsin	
1909	19:2	Cornell	Columbia	Syracuse	Wisconsin	Pennsylvania	
1910	20:42 1/5	Cornell	Pennsylvania	Columbia	Syracuse	Wisconsin	
1911	20:10 4/5	Cornell	Columbia	Pennsylvania	Wisconsin	Syracuse	
1912	19:31 2/5	Cornell	Wisconsin	Columbia	Syracuse	Pennsylvania	Stanford
1913	19:28 3/5	Syracuse	Cornell	Washington	Wisconsin	Columbia	Pennsylvania
1914	19:37 4/5	Columbia	Pennsylvania	Cornell	Syracuse	Washington	Wisconsin
1915	19:36 3/5	Cornell	Stanford	Syracuse	Columbia	Pennsylvania	
1916	20:15 2/5	Syracuse	Cornell	Columbia	Pennsylvania		
1920	11:2 3/5	Syracuse	Cornell	Columbia	Pennsylvania		
1921	14:7	Navy	California	Cornell	Pennsylvania	Syracuse	Columbia
1922*	13:33 3/5	Navy	Washington	Syracuse	Cornell	Columbia	Pennsylvania
1923	14:3 1/5	Washington	Navy	Columbia	Syracuse	Cornell	Pennsylvania
1924	15:2	Washington	Wisconsin	Cornell	Pennsylvania	Syracuse	Columbia
1925	19:24 4/5	Navy	Washington	Wisconsin	Pennsylvania	Cornell	Syracuse
1926	19:28 3/5	Washington	Navy	Syracuse	Pennsylvania	Columbia	California
1927	20:57	Columbia	Washington	California	Navy	Cornell	Syracuse
1928	18:35 4/5	California	Columbia	Washington	Cornell	Navy	Syracuse
1929	22:58	Columbia	Washington	Pennsylvania	Navy	Wisconsin	
1930	21:42	Cornell	Syracuse	M. I. T.	California	Columbia	Washington
1931	18:54 1/5	Navy	Washington	California	Syracuse	Pennsylvania	
1932	19:55	California	Cornell	Washington	Navy	Syracuse	Columbia
1934	19:44	California	Washington	Navy	Cornell	Pennsylvania	Syracuse
1935	18:52	California	Cornell	Washington	Navy	Syracuse	Pennsylvania
1936	19:9 3/5	Washington	California	Navy	Columbia	Cornell	Pennsylvania
1937	18:33 3/5	Washington	Navy	Cornell	Syracuse	California	Columbia
1938	18:19	Navy	California	Washington	Columbia	Wisconsin	Cornell
1939†	18:12 3/5	California	Washington	Navy	Cornell	Syracuse	Wisconsin
1940	22:42	Washington	Cornell	Syracuse	Navy	California	Columbia
1941	18:53 3/10	Washington	California	Cornell	Syracuse	Princeton	Wisconsin
1947	13:59 1/5	Navy	Cornell	Washington	California	Princeton	Syracuse
1948	14:06 2/5	Washington	California	Navy	Cornell	M. I. T.	Princeton
1949	14:42 3/5	California	Washington	Cornell	Navy	Princeton	Pennsylvania
1950	8:07.5	Washington	California	Wisconsin	Stanford	M. I. T.	Columbia
1951	7:50.5	Wisconsin	Washington	Princeton	California	Pennsylvania	M. I. T.
1952	15:08.1	Navy	Princeton	Cornell	Wisconsin	California	Columbia
1953	15:29.6	Navy	Cornell	Washington	Wisconsin	Columbia	California
1954	16:04.4	†Navy	Cornell	Washington	Wisconsin	California	Columbia
1955	15:49.9	Cornell	Pennsylvania	Navy	Washington	Stanford	California
1956	16:22.4	Cornell	Navy	Wisconsin	Washington	Stanford	Pennsylvania

* Record for three miles. † Record for four miles. ‡ Disqualified.

SEVENTH—1925, Columbia; 1926, Wisconsin; 1927, Pennsylvania; 1928, Pennsylvania; 1930, Pennsylvania; 1931, Columbia; 1932, Pennsylvania; 1934, Columbia; 1935, Columbia; 1936, Syracuse; 1937, Wisconsin; 1938, Syracuse; 1939, Columbia; 1940, Wisconsin; 1941, Rutgers; 1947, Wisconsin; 1948, Pennsylvania; 1949, Wisconsin; 1950, Cornell; 1951, Stanford; 1952, Washington; 1953, Pennsylvania; 1954, Pennsylvania; 1955, Boston U.; 1956, Princeton.

EIGHTH—1926, Cornell; 1930, Wisconsin; 1931, Wisconsin; 1932, M. I. T.; 1940, Princeton; 1941, M. I. T.; 1947, M. I. T.; 1948, Wisconsin; 1949, Columbia; 1950, Pennsylvania; 1951, Cornell; 1952, Stanford; 1953, Princeton; 1954, Boston U.; 1955, Princeton; 1956, Syracuse.

NINTH—1931, M. I. T.; 1941, Columbia; 1947, Pennsylvania; 1948, Syracuse; 1949, Syracuse; 1950, Princeton;

1951, Syracuse; 1952, Pennsylvania; 1953, Syracuse; 1954, Princeton; 1955, Wisconsin; 1956, M. I. T.

TENTH—1947, Rutgers; 1948, Columbia; 1949, Stanford; 1950, Syracuse; 1951, Boston U.; 1952, M. I. T.; 1953, M. I. T.; 1954, M. I. T.; 1955, M. I. T.; 1956, California.

ELEVENTH—1947, Columbia; 1948, Rutgers; 1949, M. I. T.; 1950, Rutgers; 1951, Columbia; 1952, Syracuse; 1953, Stanford; 1954, Syracuse; 1955, Columbia; 1956, Boston U.

TWELFTH—1949, Rutgers; 1950, Navy; 1951, Navy; 1955, Syracuse; 1956, Columbia.

SWAMPED—1895, Pennsylvania; 1897, Pennsylvania; 1907, Syracuse; 1929, M. I. T.; Syracuse, California, Cornell; 1930, Navy.

ICE HOCKEY

ICE HOCKEY, by birth and upbringing a Canadian game, is an offshoot of field hockey. Some historians state that the first ice hockey game was played in Montreal in December, 1879, between two teams composed almost exclusively of McGill University students, but others assert that Kingston, Ont., or Halifax, N. S., were scenes of earlier hockey games. In the Montreal game of 1879 there were fifteen players on a side and they used an assortment of crude sticks to keep the puck in motion. Early rules allowed nine men on a side but the number was reduced to seven in 1886 and finally reduced to six, the standard of today.

The first governing body of the sport was the Amateur Hockey Association of Canada, organized in 1887. In the winter of 1894-95 a group of college students from the United States visited Canada, saw hockey played, became enthused over the game and introduced it as a winter sport when they returned home. This was the

start of hockey in the United States. The first professional league was the International Hockey League that operated, strangely enough, not in Canada but in northern Michigan in 1904-06 and included as players such famous stars as Cyclone Taylor and Hod Stuart, later included in the Hockey Hall of Fame.

Until 1910, professionals and amateurs were allowed to play together on "mixed teams," but this arrangement ended with the formation of the first "big league," the National Hockey Association, in eastern Canada in 1910. The Pacific Coast League, to provide professional hockey in the West, was organized in 1911 with Seattle (and later other American cities) included in the circuit. The National Hockey League replaced the National Hockey Association in 1917. Boston, in 1924, was the first American city to join that circuit. The Stanley Cup, top trophy of hockey, was competed for by "mixed teams" from 1894 to 1910, thereafter by professionals.

Professional Statistics

STANLEY CUP WINNERS

Emblematic of world professional championship.

1894—Montreal A. A. A	1909—Ottawa Senators	1925—Victoria Cougars	1941—Boston Bruins
1895—Montreal Victorias	1910—Montreal Wanderers	1926—Montreal Maroons	1942—Toronto Maple Leafs
1896—Winnipeg Victorias	1911—Ottawa Senators	1927—Ottawa Senators	1943—Detroit Red Wings
1897—Montreal Victorias	1912—Quebec Bulldogs	1928—N. Y. Rangers	1944—Montreal Canadiens
1898—Montreal Victorias	1913—Quebec Bulldogs	1929—Boston Bruins	1945—Toronto Maple Leafs
1899—Montreal Victorias	1914—Toronto	1930—Montreal Canadiens	1946—Montreal Canadiens
1900—Montreal Shamrocks	1915—Vancouver Millionaires	1931—Montreal Canadiens	1947—Toronto Maple Leafs
1901—Winnipeg Victorias	1916—Montreal Canadiens	1932—Toronto Maple Leafs	1948—Toronto Maple Leafs
1902—Montreal A. A. A.	1917—Seattle Metropolitans	1933—N. Y. Rangers	1949—Toronto Maple Leafs
1903—Ottawa Silver Seven	1918—Toronto Arenas	1934—Chicago Black Hawks	1950—Detroit Red Wings
1904—Ottawa Silver Seven	1919—Series unfinished†	1935—Montreal Maroons	1951—Toronto Maple Leafs
1905—Ottawa Silver Seven	1920—Ottawa Senators	1936—Detroit Red Wings	1952—Detroit Red Wings
1906—Montreal Wanderers	1921—Ottawa Senators	1937—Detroit Red Wings	1953—Montreal Canadiens
1907—Kenora Thistles	1922—Toronto St. Patricks	1938—Chicago Black Hawks	1954—Detroit Red Wings
1907—Mont. Wanderers*	1923—Ottawa Senators	1939—Boston Bruins	1955—Detroit Red Wings
1908—Montreal Wanderers	1924—Montreal Canadiens	1940—N. Y. Rangers	1956—Montreal Canadiens

* March.

† The Montreal Canadiens and Seattle, P.C.H.L. champions, had played five games at Seattle, Wash., when an influenza epidemic (which took the life of Joe Hall of the Canadiens) caused the Department of Health to stop the series. Each team won two games, with one contest ending in a tie.

MOST VALUABLE PLAYER

The Hart Trophy

Awarded annually to the player considered most valuable to his team in the regular N. H. L. season.

1924	Frank Nighbor, Ottawa	1941	Bill Cowley, Boston
1925	Billy Burch, Hamilton	1942	Tom Anderson, New York Americans
1926	Nels Stewart, Montreal Maroons	1943	Bill Cowley, Boston
1927	Herb Gardiner, Montreal Canadiens	1944	Babe Pratt, Toronto
1928	Howie Morenz, Montreal Canadiens	1945	Elmer Lach, Montreal Canadiens
1929	Roy Worters, New York Americans	1946	Max Bentley, Chicago
1930	Nels Stewart, Montreal Maroons	1947	Maurice Richard, Montreal Canadiens
1931-32	Howie Morenz, Montreal Canadiens	1948	Buddy O'Connor, New York Rangers
1933	Eddie Shore, Boston	1949	Sid Abel, Detroit
1934	Aurel Joliat, Montreal Canadiens	1950	Chuck Rayner, New York Rangers
1935-36	Eddie Shore, Boston	1951	Milt Schmidt, Boston
1937	Babe Siebert, Montreal Canadiens	1952-53	Gordon Howe, Detroit
1938	Eddie Shore, Boston	1954	Al Rollins, Chicago
1939	Toe Blake, Montreal Canadiens	1955	Ted Kennedy, Toronto
1940	Ebbie Goodfellow, Detroit	1956	Jean Beliveau, Montreal Canadiens

BOXING

WHETHER it be called pugilism, prize fighting or boxing, there is no tracing "the Sweet Science" to any definite source. Tales of rivals exchanging blows for fun, fame or money go back to earliest recorded history and classical legend. There was a mixture of boxing and wrestling called the "pancratium" in the ancient Olympic Games and in such contests the rivals belabored one another with hands fortified with heavy leather wrappings that were sometimes studded with metal. More than one Olympic competitor lost his life at this brutal exercise.

There was little law or order in pugilism until Jack Broughton, one of the early champions of England, drew up a set of rules for the game in 1743. Broughton, called "the father of English boxing," also is credited with having invented boxing gloves. However, these gloves—or "mufflers" as they were called—were used only in teaching "the manly art of self-defense" or in training bouts. All professional

championship fights were contested with "bare knuckles" until 1892 when John L. Sullivan lost the heavyweight championship of the world to James J. Corbett in New Orleans in a bout in which both contestants wore regulation gloves.

The Broughton rules were superseded by the London Prize Ring Rules of 1838. The 8th Marquess of Queensberry, with the help of John G. Chambers, put forward the "Queensberry Rules" in 1866, a code that called for gloved contests. Amateurs took quickly to the Queensberry Rules, the professionals slowly.

There is no official international set of rules for boxing even today. Amateur organizations set rules for amateurs in different countries and professional rules set by boxing commissions vary even in different sections of the United States, but the variations are for the most part minor. A prize fighter doesn't have to change his style greatly to ply his trade anywhere in the world.

Boxing Statistics

Source: Nat Fleischer's *All-Time Ring Record Book*, published and copyrighted by The Ring Book Shop, Inc., Madison Square Garden, New York, N. Y.

Boxing's Biggest Gates

WF—Won on foul.		ND—No decision.		(1st)—First bout.	(2d)—Second bout:	(3d)—Third bout:	
Date	Winner, weight	Loser, weight	Rounds	Site	Receipts	Attendance	
Sept. 22, 1927	Tunney (189½)-Dempsey (192½) (2d) . .		10	Soldier Field, Chicago.	\$2,658,660	104,943	
June 19, 1945	Louis (207)-Conn (187) (2d)		KO 8	Yankee Stadium, New York.	1,925,564	45,266	
Sept. 23, 1926	Tunney (189½)-Dempsey (190) (1st)		10	Sesquicentennial Stdm., Phila.	1,895,733	120,757	
July 2, 1921	Dempsey (188)-Carpentier (172)		KO 4	Boyle's 30 Acres, Jersey City.	1,789,238	80,000	
Sept. 14, 1923	Dempsey (192½)-Firpo (216½)		KO 2	Polo Grounds, New York.	1,188,603*	82,000	
July 21, 1927	Dempsey (194½)-Sharkey (196)		KO 7	Yankee Stadium, New York.	1,083,530*	75,000	
June 22, 1938	Louis (198¾)-Schmeling (193) (2d)		KO 1	Yankee Stadium, New York.	1,015,012*	70,000	
Sept. 24, 1935	Louis (199¼)-Max Baer (210½)		KO 4	Yankee Stadium, New York.	1,000,832*	88,150	
Sept. 21, 1955	Marciano (188½)-Moore (188)		KO 9	Yankee Stadium, New York.	948,117	61,574	
June 25, 1948	Louis (213½)-Walcott (194½) (2d)		KO 11	Yankee Stadium, New York.	841,739	42,667	
Sept. 12, 1951	Robinson (157½)-Turpin (159) (2d)		KO 10	Polo Grounds, New York.	767,626	61,370	
June 12, 1930	Schmeling (188)-Sharkey (197) (1st) . . .		WF 4	Yankee Stadium, New York.	749,935	79,222	
June 22, 1937	Louis (197¼)-Braddock (197)		KO 8	Comiskey Park, Chicago.	715,470	45,500	
July 26, 1928	Tunney (192)-Heeney (203½)		KO 11	Yankee Stadium, New York.	691,014	45,890	
Sept. 29, 1941	Louis (202¼)-Nova (202¼)		KO 6	Polo Grounds, New York.	583,711	56,549	
Sept. 23, 1957	Basilio (153¾)-Robinson (160)		15	Yankee Stadium, New York.	556,467	38,072	
June 19, 1936	Schmeling (192)-Louis (198) (1st)		KO 12	Yankee Stadium, New York.	547,541	42,088	
June 17, 1954	Marciano (187½)-Charles (185½)		15	Yankee Stadium, New York.	543,092	47,585	
Sept. 11, 1924	Wills (217)-Firpo (224½)		12	Boyle's 30 Acres, Jersey City.	509,135	70,000	
Sept. 23, 1952	Marciano (184)-Walcott (196)		KO 13	Municipal Stdm., Phila.	504,645	40,379	
July 16, 1926	Delaney (166½)-Berlenbach (174¼) (3d) .		15	Ebbets Field, Brooklyn.	461,789	49,186	
July 23, 1923	Leonard (134)-Tendler (133½) (2d)		15	Yankee Stadium, New York.	452,648	58,519	
July 4, 1919	Dempsey (187)-Willard (245)		KO 3	Toledo, Ohio.	452,224	19,650	
June 18, 1941	Louis (199½)-Conn (174) (1st)		KO 13	Polo Grounds, New York.	451,743	60,071	
Sept. 24, 1953	Marciano (185)-LaStarza (184½)		KO 11	Polo Grounds, New York.	435,818	44,562	
June 21, 1932	Sharkey (205)-Schmeling (188) (2d)		15	Long Island City Bowl, N. Y.	432,365	61,863	
June 14, 1934	Max Baer (209½)-Carnera (263¼)		KO 11	Long Island City Bowl, N. Y.	428,000	56,000	
July 16, 1947	Graziano (154¼)-Zale (159) (2d)		KO 6	Chicago Stadium.	422,918	18,547	
June 25, 1952	Maxim (173)-Robinson (157½)		KO 14	Yankee Stadium, New York.	421,698	47,983	
Feb. 27, 1929	Sharkey (192)-Stribling (182)		10	Flamingo Park, Miami Beach, Fla. . .	405,000	40,000	
July 12, 1923	Firpo (214)-Willard (242)		KO 8	Boyle's 30 Acres, Jersey City.	390,837	80,000	
May 12, 1923	Firpo (212)-McAuliffe (200)		KO 3	Yankee Stadium, New York.	385,040	31,000	
	Willard (245)-Floyd Johnson (195)		KO 11				
June 27, 1929	Schmeling (187)-Uzcudun (192½) (1st) . .		15	Yankee Stadium, New York.	378,902	65,000	
July 27, 1922	Leonard (134¼)-Tendler (134¼) (1st) . .		ND 12	Boyle's 30 Acres, Jersey City.	367,862	54,685	

* Includes income from other sources, such as motion pictures or radio; or both.

HISTORY OF WORLD HEAVYWEIGHT CHAMPIONSHIP FIGHTS

(Bouts in which title changed hands)

Date	Where held	Winner, weight, age	Loser, weight, age	Rounds	Referee
July 8, 1889	Richburg, Miss.	John L. Sullivan, 198 (30)	Jake Kilrain, 195 (30)	75	John Fitzpatrick
(Last bare-knuckle title fight)					
Sept. 7, 1892	New Orleans, La.	James J. Corbett, 178 (26)	John L. Sullivan, 212 (33)	21	Prof. John Duffy
March 17, 1897	Carson City, Nev.	Bob Fitzsimmons, 167 (34)	James J. Corbett, 183 (30)	KO 14	George Siler
June 9, 1899	Coney Island, N. Y.	*James J. Jeffries, 206 (24)	Bob Fitzsimmons, 167 (37)	KO 11	George Siler
Feb. 23, 1906	Los Angeles.	†Tommy Burns, 188 (24)	Marvin Hart, 188 (29)	20	James J. Jeffries
Dec. 26, 1908	Sydney, N. S. W.	Jack Johnson, 196 (30)	Tommy Burns, 176 (27)	KO 14	Hugh McIntosh
July 4, 1910	Reno, Nev.	Jack Johnson, 208 (31)	James J. Jeffries, 227 (34)	KO 15	Tex Rickard
(Jeffries came out of retirement in an effort to regain title)					
April 5, 1915	Havana, Cuba.	Jess Willard, 230 (31)	Jack Johnson, 205½ (37)	KO 26	Jack Welch
July 4, 1919	Toledo, Ohio.	Jack Dempsey, 187 (24)	Jess Willard, 245 (35)	KO 3	Ollie Pecord
Sept. 23, 1926	Philadelphia.	†Gene Tunney, 189½ (28)	Jack Dempsey, 190 (31)	10	Pop Reilly
June 12, 1930	New York.	Max Schmeling, 188 (24)	Jack Sharkey, 197 (27)	WF 4	Jim Crowley
June 21, 1932	Long Island City.	Jack Sharkey, 205 (29)	Max Schmeling, 188 (26)	15	Gunboat Smith
June 29, 1933	Long Island City.	Primo Carnera, 260½ (26)	Jack Sharkey, 201 (30)	KO 6	Arthur Donovan
June 14, 1934	Long Island City.	Max Baer, 209½ (25)	Primo Carnera, 263¾ (27)	KO 11	Arthur Donovan
June 13, 1935	Long Island City.	Jim Braddock, 193¾ (29)	Max Baer, 209½ (26)	15	Jack McAvo
June 22, 1937	Chicago.	Joe Louis, 197¾ (23)	Jim Braddock, 197 (31)	KO 8	Tommy Thomas
June 22, 1949	Chicago.	(a)Ezzard Charles, 181¾ (27)	Joe Walcott, 195½ (35)	15	Davey Miller
Sept. 27, 1950	New York.	(b)Ezzard Charles, 184¾ (29)	Joe Louis, 218 (36)	15	Mark Conn
July 18, 1951	Pittsburgh.	Joe Walcott, 194 (37)	Ezzard Charles, 182 (30)	KO 7	Buck McTiernan
Sept. 23, 1952	Philadelphia.	(c)Rocky Marciano, 184 (28)	Joe Walcott, 196 (38)	KO 13	Charley Daggert
Nov. 30, 1956	Chicago.	Floyd Patterson, 182¾ (21)	Archie Moore, 187¾ (39)	KO 5	Frank Sikora

* Lack of opposition caused Jeffries to retire in March 1905. He named Marvin Hart and Jack Root as the leading contenders and agreed to referee their fight at Reno, Nev., on July 3, 1905, with the stipulation that he would designate the winner the world champion. Hart, 190 (28), knocked out Root, 171 (29), in the twelfth round. † Burns claimed the title after defeating Hart. Philadelphia Jack O'Brien became another claimant after fighting a 20-round draw with Burns at Los Angeles on Nov. 28, 1906, with Jeffries as the referee. Burns, 180 (25), eliminated O'Brien, 167 (29), by defeating him in 20 rounds at Los Angeles, May 8, 1907. Charles Eytton was the referee. ‡ Tunney retired after his bout with Tom Heeney in New York on July 26, 1928. Tunney, 192 (30), knocked out Heeney, 203 (30½), in the eleventh round. Ed Forbes was the referee.

(a) Recognized by the National Boxing Association because Louis had announced his retirement on March 1, 1949. (b) Charles gained undisputed possession of the title by beating Louis, who came out of retirement in an effort to regain the crown. (c) Marciano retired April 27, 1956.

BARE-KNUCKLE HEAVYWEIGHT CHAMPIONS, 1719-1892

- 1719—Jim Figg
 1734—George Taylor
 1740—Jack Broughton
 1750—Jack Slack
 1760—Bill Stevens
 1761—George Meggs
 1765—Bill Darts
 1777—Harry Sellers
 1780—Jack Harris
 1785—Tom (Jackling) Johnson
 1790—Big Ben Brain
 1792—Daniel Mendoza
 1795—John Jackson (retired)
 1802—Jem Belcher
 1805—Henry Pearce (Game Chicken)
 1808—John Gully (declined title)
 1809—Tom Cribb received belt, not transferable, and cup
 1824—Tom Spring received four cups; resigned title.
 1825—Jem Ward received belt, not transferable.
 1838—James (Deaf) Burke claimed title.
 1839—William Thompson (Bendigo) beat Burke; claimed championship; received belt from Jem Ward.
 1841—Nick Ward (Jem's brother) beat Ben Caunt, Feb. 2. In return match Caunt beat Nick Ward and received belt by subscription. It was transferable.
 1845—Thompson beat Caunt and got belt.
 1850—Bill Perry (The Tipton Slasher), after fight with Paddock, claimed title.
 1851—Harry Broome won title from Perry.
 1853—Perry claimed title when Broome forfeited £200 to him in a match; retired from ring on Aug. 13.
 1857—Tom Sayers beat Perry for £200 a side and new belt.
 1860—Sayers retired after 42-round draw with John C. Heenan (The Benicia Boy), leaving old belt open for competition.
 1860—Sam Hurst (The Stalybridge Infant) beat Paddock and received belt.
 1861—Jem Mace beat Hurst.
 1862—Mace beat Tom King for £200 a side and the belt.
 1862—King beat Mace and claimed belt. Subsequently gave it up. Declined to meet Mace again. Mace claimed belt.
 1863—King beat Heenan for £1,000 a side.
 1865—Joe Wormald beat Andrew Marsden for £200 a side and belt, which had been claimed by both. Belt was given to Wormald, who forfeited £120 to Mace.
 1866—Mace and Joe Goss fought draw with £200 a side and belt at stake.
 1867—Wormald received £200 forfeit from Ned O'Baldwin and claimed belt when O'Baldwin failed to appear at starting place.
 1867—Mace and O'Baldwin drew; £200 a side; title and belt in abeyance.
 1868—Wormald and O'Baldwin drew; £200 a side and title in America.
 1869—Mike McCool beat Tom Allen in America for world championship.
 1870—Mace beat Allen in America for world championship.
 1871—Mace and Joe Coburn fought draw for championship; £500 a side.
 1882—John L. Sullivan defeated Paddy Ryan for American championship only; 9 rounds, Mississippi City, Miss. (London Prize Ring rules).
 1885—Jem Smith beat Jack Davis for £100 a side and championship of England.
 1887—Jake Kilrain and Jem Smith drew; \$10,000 and Police Gazette Championship of World belt.
 1889—John L. Sullivan beat Jake Kilrain, 75 rounds, Richburg, Miss., July 8, in last bare-knuckle championship fight; \$10,000 a side and Police Gazette Belt. (Sullivan claimed world title because of draw fought by Kilrain with Smith, England's titleholder.)

Other World Boxing Titleholders

LIGHT HEAVYWEIGHT CHAMPIONS

1903 —Jack Root, George Gardner
 1903-05—Bob Fitzsimmons
 1905-12—Philadelphia Jack O'Brien
 1912-16—Jack Dillon
 1916-20—Battling Levinsky
 1920-22—Georges Carpentier
 1923 —Battling Siki
 1923-25—Mike McTigue
 1925-26—Paul Berlenbach
 1926-27—Jack Delaney (a)
 1927 —Mike McTigue
 1927-29—Tommy Loughran (a)
 1930-34—Maxie Rosenbloom
 1934-35—Bob Olin
 1935-39—John Henry Lewis (a)
 1939 —Melio Bettina
 1939-41—Billy Conn (a)
 1941-48—Gus Lesnewich
 1948-50—Freddie Mills
 1950-53—Joey Maxim
 1953 —Archie Moore
 (a) Abandoned title.

MIDDLEWEIGHT CHAMPIONS

1867-72—Tom Chandler (bare knuckles).
 1872-81—Geo. Rourke (bare knuckles and gloves)
 1881-82—Mike Donovan (r)
 1884-91—Jack (Nonpareil) Dempsey
 1891-97—Bob Fitzsimmons
 1897-1907—Tommy Ryan, Kid McCoy, Philadelphia Jack O'Brien (t)
 1907-08—Stanley Ketchel
 1908 —Billy Papke
 1908-10—Stanley Ketchel
 1910-13—Billy Papke
 1913 —Frank Klaus
 1913-14—George Chip
 1914-17—Al McCoy
 1917-20—Mike O'Dowd
 1920-23—Johnny Wilson
 1923-26—Harry Greb
 1926 —Tiger Flowers
 1926-31—Mickey Walker (a)
 1931-32—Gorilla Jones (NBA); Ben Jeby (N. Y. Comm.)
 1932-37—Marcel Thil*
 1938 —Al Hostak and Solly Krieger (NBA)
 1939 —Solly Krieger, Al Hostak (NBA); Ceferino Garcia (N. Y. Comm.)
 1940 —Tony Zale (NBA); Ken Overlin (N. Y. Comm.)
 1941 —Tony Zale (NBA); Billy Soose (N. Y. Comm.)
 1941-47—Tony Zale
 1947-48—Rocky Graziano
 1948 —Tony Zale
 1948-49—Marcel Cerdan
 1949-51—Jake La Motta
 1951 —Ray Robinson, Randy Turpin
 1951-52—Ray Robinson (r)
 1953-55—Carl Olson
 1955-57—Ray Robinson
 1957 —Gene Fullmer
 1957 —Ray Robinson
 1957 —Carmen Basilio

(r) Retired. (t) Title claimants. (a) Abandoned title. Thil's victory on a foul over Jones gave him a clear title claim, but the New York Commission withheld recognition. At various times during the 1932-37 period, championship recognition by the different bodies was given to the following: Ben Jeby, Lou Brouillard, Vince Dundee, Teddy Yarosz, Babe Risko, and Freddy Steele. Fred Apostoli knocked out Thil in 10 rounds at the Polo Grounds, Sept. 23, 1937, but did not claim the title because of an agreement made with Thil. This was Thil's last fight.

WELTERWEIGHT CHAMPIONS

1892-94—Mysterious Billy Smith
 1894-96—Tommy Ryan
 1896 —Kid McCoy (o)
 1900 —Rube Ferns, Matty Matthews
 1901 —Rube Ferns
 1901-06—Joe Walcott*
 1906-07—Honey Mellody
 1907 —Mike (Twin) Sullivan†
 1915 —Ted Lewis†
 1919-22—Jack Britton
 1922-26—Mickey Walker
 1926-27—Pete Latzo
 1927-29—Joe Dundee
 1929-30—Jackie Fields
 1930 —Young Jack Thompson
 1930-31—Tommy Freeman
 1931 —Young Jack Thompson
 1931-32—Lou Brouillard
 1932-33—Jackie Fields
 1933 —Young Corbett 3d
 1933-34—Jimmy McLarnin
 1934 —Barney Ross
 1934-35—Jimmy McLarnin
 1935-38—Barney Ross
 1938-40—Henry Armstrong
 1940-41—Fritzie Zivic
 1941-46—Freddie Cochrane
 1946-47—Marty Servo (r)
 1947-51—Ray Robinson (a)
 1951 —Johnny Bratton (NBA)
 1951-54—Kid Gavilan
 1954-55—Johnny Saxton
 1955 —Tony DeMarco
 1955-56—Carmen Basilio
 1956 —Johnny Saxton
 1956-57—Carmen Basilio (a)

(o) Outgrew class. * Walcott lost on foul to Dixie Kid in 1904, but decision was disputed. Dixie Kid went abroad, outgrew class, and Walcott was again recognized as the champion. † Sullivan outgrew class. The title was claimed by Jimmy Gardner, Jimmy Clabby, Ray Bronson, Clarence (Kid) Ferns, Mike Gibbons, Kid Graves, Mike Glover, Ted Lewis, and Jack Britton but no one received recognition as titleholder until Ted Lewis established his claim in 1915. ‡ Lewis outpointed Britton to gain undisputed possession of the crown on Aug. 31, 1916, and fought Britton a number of times over a period of four years with varying results until March 17, 1919, when Britton became the undisputed titleholder by knocking out Lewis. (r) Retired. (a) Abandoned title.

Famous Firsts in Boxing

First set of boxing rules and first set of boxing gloves: Made by Jack Broughton, 1743.

First glove fight: Between two English boxers, at Aix-la-Chapelle, France, October 8, 1818.

First million-dollar gate: Jack Dempsey vs. Georges Carpentier at Boyle's Thirty Acres, Jersey City, N. J., July 2, 1921 (\$1,789,238).

First round-by-round fight broadcast: Dempsey vs. Carpentier, 1921, J. Andrew White announcer.

First fight on television (publicly screened): Eric Boon vs. Arthur Danahar, Harringay Arena, London, England, February 23, 1939.

LIGHTWEIGHT CHAMPIONS

- 1885-96—Jack McAuliffe*
 1896-99—Kid Lavigne
 1899-02—Frank Erne
 1902-08—Joe Gans
 1908-10—Battling Nelson
 1910-12—Ad Wolgast
 1912-14—Willie Ritchie
 1914-17—Freddy Welsh
 1917-25—Benny Leonard (r)
 1925 —Jimmy Goodrich
 1925-26—Rocky Kansas
 1926-30—Sammy Mandell
 1930 —Al Singer
 1930-33—Tony Canzoneri
 1933-35—Barney Ross
 1935-36—Tony Canzoneri
 1936-38—Lou Ambers
 1938-39—Henry Armstrong
 1939-40—Lou Ambers
 1940-41—Lew Jenkins
 1941-42—Sammy Angott (a)
 1943 —Beau Jack, Bob Montgomery (N. Y. Comm.), Sammy Angott (NBA).
 1944 —Beau Jack, Bob Montgomery (N. Y. Comm.), Sammy Angott, Juan Zurita (NBA).
 1945 —Bob Montgomery (N. Y. Comm.), Juan Zurita, Ike Williams (NBA).
 1946-47—Bob Montgomery (N. Y. Comm.), Ike Williams (NBA).
 1947-51—Ike Williams
 1951-52—James Carter
 1952 —Lauro Salas
 1952-54—James Carter
 1954 —Paddy DeMareo
 1954-55—James Carter
 1955-56—Wallace Smith
 1956 —Joe Brown

* McAuliffe was champion of America, but never held the world crown, his battle for the world title with Jem Carney of England in 1887 resulting in a 74-round draw. (r) Retired. (a) Abandoned title.

FEATHERWEIGHT CHAMPIONS

- 1889 —Freddy Bogan
 1890 —Billy Murphy
 1892-1900—George Dixon
 1900-01—Terry McGovern
 1901 —Young Corbett (o)
 1904-08—Brooklyn Tommy Sullivan
 1908-12—Abe Attell
 1912-23—Johnny Kilbane
 1923 —Eugene Crique
 1923-25—Johnny Dundee (o)
 1925-27—Louis (Kid) Kaplan (o)
 1927-28—Benny Bass
 1928 —Tony Canzoneri
 1928-29—Andre Routis
 1929-32—Battling Battalino (o)
 1932 —Tommy Paul (NBA); Kid Chocolate (N. Y. Comm.).
 1933-36—Freddie Miller
 1936-37—Petey Sarron
 1937-38—Henry Armstrong (a)
 1938-40—Joey Archibald
 1940-41—Harry Jeffra, Joey Archibald
 1941-42—Chalky Wright
 1942-48—Willie Pep
 1948-49—Sandy Saddler
 1949-50—Willie Pep
 1950-57—Sandy Saddler(a)
 1957 —Kid Bassey

(o) Outgrew class. (a) Abandoned title.

BANTAMWEIGHT CHAMPIONS

- 1890-92—George Dixon (o)
 1894-99—Jimmy Barry (r)
 1899-1900—Terry McGovern (o)
 1901 —Harry Harris (o)
 1902-03—Harry Forbes
 1903-04—Frankie Neil
 1904 —Joe Bowker (o)
 1905-07—Jimmy Walsh (o)
 1910-14—Johnny Coulon
 1914-17—Kid Williams
 1917-20—Pete Herman
 1920-21—Joe Lynch
 1921 —Pete Herman
 1921-22—Johnny Buff
 1922-24—Joe Lynch
 1924 —Abe Goldstein
 1924-25—Eddie (Cannonball) Martin
 1925 —Charlie (Phil) Rosenberg (d)
 1929-35—Al Brown
 1935-36—Baltazar Sangchili
 1936 —Tony Marino
 1936-37—Sixto Escobar
 1937-38—Harry Jeffra
 1938-40—Sixto Escobar (r)
 1940-42—Lou Salica
 1942-47—Manuel Ortiz
 1947 —Harold Dade
 1947-50—Manuel Ortiz
 1950-52—Vic Towel
 1952-54—Jimmy Carruthers (r)
 1954-56—Robert Cohen
 1956-57—Mario D'Agata
 1956 —Raul Macias (NBA)
 1957 —Alphonse Halima

(o) Outgrew class. (r) Retired. (d) Deprived of title when unable to make weight for championship bout.

FLYWEIGHT CHAMPIONS

- 1916-23—Jimmy Wilde
 1923-25—Pancho Villa*
 1925 —Frankie Genaro
 1925-27—Fidel La Barba (r)
 1927 —Corporal Izzy Schwartz†
 1930 —Midget Wolgast (N. Y. Comm.); Frankie Genaro (NBA).
 1931-32—Young Perez
 1932-35—Jackie Brown
 1935-38—Benny Lynch (r)
 1939 —Peter Kane (a)
 1943-47—Jackie Paterson (d)
 1947-50—Rinty Monaghan (r)
 1950 —Terry Allen
 1950-52—Dado Marino
 1952-54—Yoshio Shirai
 1954 —Pascual Perez

* Villa died in 1925, Genaro claiming title. † Schwartz was recognized as champion by N. Y. Comm., but conditions in the class became confused and were not straightened out until an elimination tourney was held in November, 1929. (r) Retired. (a) Abandoned title. (d) Deprived of title.

PROFESSIONAL WEIGHT LIMITS

	lbs.
Flyweight	112
Bantamweight	118
Featherweight	126
Lightweight	135
Welterweight	147
Middleweight	160
Light heavyweight	175
Heavyweight	over 175

ICE (FIGURE) SKATING

Source: Art Goodfellow, Editor, National Sports Publications, 7 Park Ave., New York, N. Y.

WORLD CHAMPIONS

Year	Men	Women
1896	Gilbert Fuchs, Germany	
1897	Gustav Hugel, Austria	
1898	H. Grenander, Sweden	
1899	Gustav Hugel, Austria	
1900	Gustav Hugel, Austria	
1901	Ulrich Salchow, Sweden	
1902	Ulrich Salchow, Sweden	
1903	Ulrich Salchow, Sweden	
1904	Ulrich Salchow, Sweden	
1905	Ulrich Salchow, Sweden	
1906	Gilbert Fuchs, Germany	Madge Syers, England
1907	Ulrich Salchow, Sweden	Madge Syers, England
1908	Ulrich Salchow, Sweden	Lily Kronberger, Hungary
1909	Ulrich Salchow, Sweden	Lily Kronberger, Hungary
1910	Ulrich Salchow, Sweden	Lily Kronberger, Hungary
1911	Ulrich Salchow, Sweden	Lily Kronberger, Hungary
1912	Fritz Kachler, Austria	Meray Horvath, Hungary
1913	Fritz Kachler, Austria	Meray Horvath, Hungary
1914	Gosta Sandahl, Sweden	Meray Horvath, Hungary
1915-21	No competition	No competition
1922	Gillis Grafstrom, Sweden	Mrs. Szabo Plank, Austria
1923	Fritz Kachler, Austria	Mrs. Szabo Plank, Austria
1924	Gillis Grafstrom, Sweden	Mrs. Szabo Plank, Austria
1925	Willi Boeckl, Austria	Mrs. Szabo Plank, Austria
1926	Willi Boeckl, Austria	Mrs. Szabo Plank, Austria
1927	Willi Boeckl, Austria	Sonja Henie, Norway
1928	Willi Boeckl, Austria	Sonja Henie, Norway
1929	Gillis Grafstrom, Sweden	Sonja Henie, Norway
1930	Karl Schafer, Austria	Sonja Henie, Norway
1931	Karl Schafer, Austria	Sonja Henie, Norway
1932	Karl Schafer, Austria	Sonja Henie, Norway
1933	Karl Schafer, Austria	Sonja Henie, Norway
1934	Karl Schafer, Austria	Sonja Henie, Norway
1935	Karl Schafer, Austria	Sonja Henie, Norway
1936	Karl Schafer, Austria	Sonja Henie, Norway
1937	Felix Kaspar, Austria	Cecilia Colledge, England
1938	Felix Kaspar, Austria	Megan Taylor, England
1939	Graham Sharp, England	Megan Taylor, England
1940-46	No competition	No competition
1947	Hans Gerscheiler, Switzerland	Barbara A. Scott, Canada
1948	Richard Button, U. S.	Barbara A. Scott, Canada
1949	Richard Button, United States	Aja Vrzanova, Czechoslovakia
1950	Richard Button, U. S.	Aja Vrzanova, Czech.
1951	Richard Button, United States	Jeannette Altwegg, England

1952	Richard Button, U. S.	Jacqueline du Bief, France
1953	Hayes A. Jenkins, U. S.	Tenley Albright, U. S.
1954	Hayes A. Jenkins, U. S.	Gundi Busch, Germany
1955	Hayes A. Jenkins, U. S.	Tenley Albright, U. S.
1956	Hayes A. Jenkins, U. S.	Carol Heiss, U. S.

UNITED STATES CHAMPIONS

Year	Men	Women
1914	Norman Scott	Theresa Weld
1915-17	No competition	No competition
1918	Nathaniel Niles	Mrs. R. S. Beresford
1919	No competition	No competition
1920	Sherwin Badger	Theresa Weld
1921	Sherwin Badger	Theresa Blanchard
1922	Sherwin Badger	Theresa Blanchard
1923	Sherwin Badger	Theresa Blanchard
1924	Sherwin Badger	Theresa Blanchard
1925	Nathaniel Niles	Beatrice Loughran
1926	C. I. Christenson	Beatrice Loughran
1927	Nathaniel Niles	Beatrice Loughran
1928	Roger Turner	Maribel Y. Vinson
1929	Roger Turner	Maribel Y. Vinson
1930	Roger Turner	Maribel Y. Vinson
1931	Roger Turner	Maribel Y. Vinson
1932	Roger Turner	Maribel Y. Vinson
1933	Roger Turner	Maribel Y. Vinson
1934	Roger Turner	Suzanne Davis
1935	Robin Lee	Maribel Y. Vinson
1936	Robin Lee	Maribel Y. Vinson
1937	Robin Lee	Maribel Y. Vinson
1938	Robin Lee	Joan Tozzer
1939	Robin Lee	Joan Tozzer
1940	Eugene Turner	Joan Tozzer
1941	Eugene Turner	Jane Vaughn
1942	Bobby Specht	Jane V. Sullivan
1943	Arthur R. Vaughn, Jr.	Gretchen Merrill
1944	Omitted	Gretchen Merrill
1945	Omitted	Gretchen Merrill
1946	Richard Button	Gretchen Merrill
1947	Richard Button	Gretchen Merrill
1948	Richard Button	Gretchen Merrill
1949	Richard Button	Yvonne Sherman
1950	Richard Button	Yvonne Sherman
1951	Richard Button	Sonya Klopfer
1952	Richard Button	Tenley Albright
1953	Hayes A. Jenkins	Tenley Albright
1954	Hayes A. Jenkins	Tenley Albright
1955	Hayes A. Jenkins	Tenley Albright
1956	Hayes A. Jenkins	Tenley Albright

Marciano Was Unbeaten as a Pro

Rocky Marciano, heavyweight boxing champion of the world and winner of each of his 49 fights as a professional, announced his retirement from the ring on April 27, 1956. He is the only heavyweight champion ever to retire without losing a professional fight or even boxing to a draw.

Marciano won the title on Sept. 23, 1952, in Philadelphia, by knocking out Joe Walcott in the 13th round. He defended his crown six times. His gross purses for his 49 bouts have been estimated at \$2,000,000.

Marciano was born in Brockton, Mass., on Sept. 1, 1924.

Of his 49 victories, the retired champion scored 43 by knockouts, more than half of them within three rounds.

These were Marciano's championship fights:

*Sept. 23, 1952—Joe Walcott, Philadelphia.....	KO 13
May 15, 1953—Joe Walcott, Chicago.....	KO 1
Sept. 24, 1954—Roland LaStarza, New York.....	KO 11
June 17, 1954—Ezzard Charles, New York.....	W 15
Sept. 17, 1954—Ezzard Charles, New York.....	KO 8
May 16, 1955—Don Cockell, San Francisco.....	KO 9
Sept. 21, 1955—Archie Moore, New York.....	KO 9

* Won title.

ICE (SPEED) SKATING

WORLD RECORDS

Source: International Skating Union (I.S.U.).

MEN

Meters	Time	Recordholder and country	Where made	Date
500	0:40.2	Eugeny Grishin, U.S.S.R.	Lake Misurina, Italy	Jan. 22, 1956
	0:40.2	Eugeny Grishin, U.S.S.R.	Lake Misurina, Italy	Jan. 28, 1956
1,000	1:22.8	Eugeny Grishin, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 12, 1955
1,500	2:08.6	Eugeny Grishin, U.S.S.R.	Lake Misurina, Italy	Jan. 30, 1956
	2:08.6	Jurij Michailov, U.S.S.R.	Lake Misurina, Italy	Jan. 30, 1956
3,000	4:40.2	Anton Huiskes, Holland	Davos, Switzerland	Jan. 24, 1953
5,000	7:45.6	Boris Shilkov, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 9, 1955
10,000	16:32.6	Hjalmar Andersen, Norway	Hamar, Norway	Feb. 10, 1952
All-around	184.638 pts.	Dimitry Sakunenko, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 9-10, 1955

WOMEN

500	0:45.6	Tamara Rilova, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 11, 1955
1,000	1:33.4	Tamara Rilova, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 12, 1955
1,500	2:25.5	Khalida Schegolewa, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 30, 1953
3,000	5:13.8	Rimma Zhukowa, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 23, 1953
5,000	9:01.6	Rimma Zhukowa, U.S.S.R.	Alma Ata, U.S.S.R.	Jan. 24, 1953
All-around	206.016 pts.	Innga Artamonova, U.S.S.R.	Sverdlovsk, U.S.S.R.	Mar. 5-6, 1956

NATIONAL SENIOR AMATEUR RECORDS

(Made in competition)

Source: Amateur Skating Union of the United States.

MEN'S OUTDOOR

Event	Time	Holder	Place	Date
220 yd...	18.1	Robert Fitzgerald	Minneapolis	1/10/43
440 yd...	35.4	Charles Gorman	Lake Placid	2/14/27
	35.4	Ken Bartholomew	St. Paul	1/25/42
	35.4	Robert Fitzgerald	Minneapolis	2/15/42
880 yd...	1:14.2	Robert Fitzgerald	Minneapolis	1/7/45
1 mi...	1:55.8	Clas Thunberg	Saranac Lake	2/15/26
1 mi...	2:38.2	Clas Thunberg	Lake Placid	2/12/26
*1 mi...	2:29.7	Del Lamb	Oslo	2/19/48
2 mi...	5:33.8	Eddie Schroeder	Minneapolis	1/30/34
3 mi...	8:19.6	Ross Robinson	Lake Placid	2/14/30
5 mi...	14:30.4	Ross Robinson	Lake Placid	2/12/27

* Made on 400-meter track in Norway.

BEST TIMES BY AMERICANS
AT OLYMPIC DISTANCES

500 m...	41.3	William Carow	Lake Misurina	1/22/56
			Italy	
1,500 m...	2:15.2	Pat McNamara	Lake Misurina	1/30/56
			Italy	
5,000 m...	8:10.6	Pat McNamara	Lake Misurina	1/29/56
			Italy	
10,000 m...	17:45.9	Eddie Schroeder		

WOMEN'S OUTDOOR

220 yd...	20.2	Maddy Horn	Saranac Lake	2/11/39
		Pat Gibson	St. Paul	1/30/55
440 yd...	39.4	L. Neitzel	Minneapolis	2/3/29
880 yd...	1:25.9	Maddy Horn	Escanaba*	1/13/40
1/4 mi...	2:17	Dot Franey	Minneapolis	1/16/37
1 mi...	3:06.1	Maddy Horn	Oconomowoc†	1/24/37

* Michigan. † Wisconsin.

WOMEN'S INDOOR

FOR TRACKS 12 LAPS AND UNDER

220 yd...	21.6	Dot Franey	St. Paul	2/15/36
1/4 mi...	31.0	Dot Franey	St. Louis	2/25/33
440 yd...	41.6	Dot Franey	St. Paul	2/16/36
880 yd...	1:26.7	B. M. DeSchepper	Champaign	Mar. '54
1/4 mi...	2:16.8	Jean Ashworth	Champaign	Mar. '57
1 mi...	3:10.7	B. M. DeSchepper	Champaign	Mar. '54

FOR TRACKS 13 LAPS AND OVER

440 yd...	42	B. M. DeSchepper	Edmonton	4/23-25/53
1/2 mi...	1:26.4	B. M. DeSchepper	Milwaukee	3/5-6/55
3/4 mi...	2:17.3	Pat Underhill	Milwaukee	3/5-6/55
1 mi...	3:07.2	Pat Underhill	Edmonton	4/23-25/53

MEN'S INDOOR

FOR TRACKS 12 LAPS AND UNDER

Event	Time	Holder	Place	Date
220 yd...	18	F. Robson	Boston	1/13/11
1/4 mi...	23.8	C. Gorman	St. John*	3/1/27
440 yd...	36.8	C. Gorman	St. John	2/27/25
880 yd...	1:15.6	B. O'Sickey	Pittsburgh	3/1/16
1/4 mi...	2:00.4	P. Johnston	Cleveland	3/2/28
1 mi...	2:41.2	Morris Wood-		
		F. Robson	Pittsburgh	2/13/04
1 1/2 mi...	4:25	Edmund Lamy	Cleveland	1/27/10
2 mi...	5:54.8	R. Heckenbach	St. Paul	1/30/37
3 mi...	8:58.8	P. Johnston	Pittsburgh	2/19/27
4 mi...	13:41.8	Joe Moore	Brooklyn	2/7/27
5 mi...	15:42.2	F. Stack	Chicago	2/8/30

* New Brunswick, Canada.

FOR TRACKS 13 LAPS AND OVER

440 yd...	39	Robert Olson	Edmonton	4/23-25/43
880 yd...	1:21.7	T. G. Hutchinson	Colo. Springs	4/23/49
1/4 mi...	2:06.2	E. Babayan	Colo. Springs	2/18/50
1 mi...	2:49.5	Edgar Dame	Edmonton	4/23-25/53
2 mi...	6:02.3	Edgar Dame	E. Lansing	3/28-29/52

CYCLING

Source: Otto Elsele, Racing Editor, *American Bicyclist*.

WORLD RECORDS

Unpaced Standing Start

OUTDOOR PROFESSIONAL

Distance	Holder and country	Where made	Year	Time
1 kilometer	R. H. Harris, Great Britain	Milan	1952	1:08 $\frac{3}{5}$
5 kilometers	R. Strehler, Switzerland	Milan	1956	6:08 $\frac{4}{5}$
10 kilometers	M. Archambaud, France	Milan	1937	12:53
20 kilometers	J. Anquetil, France	Milan	1956	25:27 $\frac{1}{5}$
100 kilometers	M. de Benedetti, Italy	Milan	1942	2:20:44 $\frac{4}{5}$
1 hour	J. Anquetil, France	Milan	1956	28 mi. 1,201 yds.

INDOOR PROFESSIONAL

1 kilometer	F. Pfenninger, Switzerland	Zurich	1956	1:08 $\frac{4}{5}$
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OUTDOOR AMATEUR

1 kilometer	L. Faggin, Italy	Milan	1956	1:09 $\frac{1}{5}$
5 kilometers	L. Faggin, Italy	Milan	1956	6:15 $\frac{2}{5}$
10 kilometers	E. Baldini, Italy	Milan	1956	12:37 $\frac{3}{5}$
20 kilometers	E. Baldini, Italy	Milan	1956	25:20
100 kilometers	G. Zucchetti, Italy	Milan	1956	2:25:58 $\frac{3}{5}$
1 hour	E. Baldini, Italy	Milan	1956	28 mi. 1,458 yds.

INDOOR AMATEUR

1 kilometer	R. Gaignard, France	Paris	1954	1:10 $\frac{1}{5}$
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AMATEUR BICYCLE LEAGUE OF AMERICA RECORDS

ROAD COMPETITION—SCRATCH

Distance, mi.	Time	Record-holder and where made	Date
1/4	:29 2/5	B. W. King, Atlantic City, N. J.	Sept. 16, 1922
1/3	:38 3/5	Charles Winters, Chicago, Ill.	Sept. 8, 1923
1/2	1:04 3/5	John Leahy, Louisville, Ky.	Sept. 11, 1927
1	2:02	Henry Surman	Aug. 8, 1908
		R. L. Guthridge	
		S. C. Haberle	
2	4:46 1/5	Theodore Becker, Louisville, Ky.	Sept. 10, 1927
3	7:18 2/5	Don Sheldon, Columbus, Ohio	Aug. 18, 1946
5	11:38	Vaughan Angell, Columbus, Ohio	Aug. 4, 1951
10	23:22 1/5	Gus Gatto, Columbus, Ohio	Aug. 5, 1951
15	34:14 3/5	Francois Mertens, Washington, D. C.	Aug. 1955
20	45:22	A. E. Wahl, Buffalo, N. Y.	July 4, 1921
25	1:01:00 2/5	Rupert Walti, Belleville, N. J.	May 1955
50	2:02:00	Leo Adams, Buffalo, N. Y.	July 14, 1935
100	4:33:25 1/5	Louis Maltese, Union City, N. J., to South Philadelphia, Pa.	June 6, 1926
125	5:49:00	Bernard Dodd, San Francisco, Calif.	Aug. 1956
200	9:56:49	Everett Cassagneres, Pittsburgh, Pa.	Oct. 4, 1953

NATIONAL AMATEUR CYCLING CHAMPIONS

Source: Amateur Bicycle League of America, Inc.

Year	Winner	Where held	Year	Winner	Where held
1921	Arthur Nieminsky, New York	Washington, D. C.	1940	Furman Kugler, New Jersey	Detroit
1922	Carl Hambacher, New Jersey	Atlantic City	1941	Marvin Thomson, Illinois	Pasadena, Calif.
1923	Charles Barclay, California	Chicago	1945	Ted Smith, New York	Chicago
1924	Charlie Winter, New York	Buffalo	1946	Don Hester, California	Columbus
1925	Edward Merkner, Illinois	St. Louis	1947	Ted Smith, New York	Philadelphia
1926	Edward Merkner, Illinois	Philadelphia	1948	Ted Smith, New York	Kenosha, Wis.
1927	Jimmy Walthour, Jr., New York	Louisville	1949	James Lauf, Maryland	San Diego, Calif.
1928	R. J. Connor, District of Columbia	Kenosha, Wis.	1950	Robert Pfarr, Wisconsin	New Brunswick
1929	Sergio Matteini, New York	Newark, N. J.	1951	Gus Gatto, California	Columbus
1930	Bobby Thomas, Wisconsin	Kenosha, Wis.	1952	Steve Hromjak, Ohio	New Brunswick
1935	Cecil Hursey, Georgia	Atlantic City	1953	Ronald Rhoads, California	St. Louis
1936	Jackie Simes, New Jersey	St. Louis	1954	Jack Disney, California	Minneapolis
1937	Charles Bergna, New Jersey	Buffalo	1955	Jack Disney, California	New York
1939	Martin Deras, California	Columbus	1956	Jack Disney, California	Orlando, Fla.

TRACK AND FIELD

RUNNING, jumping, hurdling and throwing weights—track and field sports, in other words—are as natural to boys and young men as eating, drinking and breathing. Unorganized competition in this form of sport goes back beyond the Cave Man era. Organized competition begins with the first recorded Olympic Games in Greece, 776 B. C., when Coroebus of Elis won the only event on the program, a race of approximately 200 yards. The Olympic Games, with an ever-widening program of events, continued until “the glory that was Greece” had faded and “the grandeur that was Rome” was tarnished, and finally were abolished by decree of Emperor Theodosius I of Rome in A. D. 394. The Tailteann Games of Ireland are supposed to have antedated the first Olympic Games by some centuries, but we have no records of the specific events and winners thereof.

Professional contests of speed and strength were popular at all times and in many lands, but the widespread competition of amateur athletes in track and field

sports is a comparatively modern development. The first organized amateur athletic meet of record was sponsored by the Royal Military Academy at Woolwich, England, in 1849. Oxford and Cambridge track and field rivalry began in 1864 and the English amateur championships were established in 1866. In the United States such organizations as the New York Athletic Club and the Olympic Club of San Francisco conducted track and field meets in the 1870's, and a few colleges joined to sponsor a meet in 1874. The success of the college meet led to the formation of the Intercollegiate Association of Amateur Athletes of America and the holding of an annual set of championship games beginning in 1876.

Many athletic clubs joined the National Association of Amateur Athletes of America, formed in 1879, but dissension broke up this organization and the Amateur Athletic Union, organized in 1888, has been the ruling body in American amateur athletics since that time.

Track and Field Statistics

Source: Official A.A.U. Track and Field Rules and Records Book. Reprinted by courtesy of the publishers, the Amateur Athletic Union of the United States, 233 Broadway, New York, N. Y.

MEN'S WORLD RECORDS

Recognized by the International Amateur Athletic Federation as of Sept. 15, 1957.

RUNNING

Event	Record	Holder	Home country	Where made	Date
100 yd.....	9.3 s.....	Melvin E. Patton.....	United States.....	Fresno, Calif.....	May 15, 1948
		Hector Hogan.....	Australia.....	Sydney.....	Mar. 13, 1954
		James Golliday.....	United States.....	Evanston, Ill.....	May 14, 1955
		Leamon King.....	United States.....	Fresno, Calif.....	May 12, 1956
220 yd.....	20 s.....	David Sime.....	United States.....	Sanger, Calif.....	June 9, 1956
440 yd.....	45.8 s.....	David Sime.....	United States.....	Sanger, Calif.....	June 9, 1956
880 yd.....	1 m. 47.5 s.....	Jim Lea.....	United States.....	Modesto, Calif.....	May 26, 1956
1 mi.....	3 m. 58 s.....	Lon Spurrier.....	United States.....	Berkeley, Calif.....	Mar. 26, 1955
2 mi.....	8 m. 33.4 s.....	John Landy.....	Australia.....	Turku, Finland.....	June 21, 1954
3 mi.....	13 m. 14.2 s.....	Sandor Iharos.....	Hungary.....	London.....	May 30, 1955
6 mi.....	27 m. 43.8 s.....	Sandor Iharos.....	Hungary.....	Budapest.....	Nov. 23, 1955
10 mi.....	48 m. 12 s.....	Sandor Iharos.....	Hungary.....	Budapest.....	July 15, 1956
15 mi.....	1 h. 14 m. 1 s.....	Emil Zatopek.....	Czechoslovakia.....	Boleslav, Czech.....	Sept. 29, 1951
1 hr.....	12 mi. 809 yd.....	Emil Zatopek.....	Czechoslovakia.....	Celakovice, Czech.....	Oct. 29, 1955
		Emil Zatopek.....	Czechoslovakia.....	Boleslav, Czech.....	Sept. 29, 1951

WALKING

Event	Record	Holder	Home country	Where made	Date
2 mi.....	12 m. 45 s.....	Werner Hardmo.....	Sweden.....	Malmö.....	Sept. 1, 1945
5 mi.....	34 m. 32.8 s.....	J. Dolezal.....	Czechoslovakia.....	Manchester, Eng.....	Oct. 15, 1955
7 mi.....	48 m. 15.2 s.....	Werner Hardmo.....	Sweden.....	Kumla, Sweden.....	Sept. 9, 1945
10 mi.....	1 h. 10 m. 45.8 s.....	J. Dolezal.....	Czechoslovakia.....	Boleslav, Czech.....	April 30, 1954
20 mi.....	2 h. 33 m. 9.4 s.....	J. Dolezal.....	Czechoslovakia.....	Boleslav, Czech.....	May 14, 1954
30 mi.....	4 h. 12 m. 3.4 s.....	Ladislav Moc.....	Czechoslovakia.....	Prague.....	June 21, 1956
1 hr.....	8 mi. 1025 yd.....	John Mikaelsson.....	Sweden.....	Stockholm.....	Sept. 1, 1945
2 hr.....	16 mi. 126 yd.....	Anatoli Vedjakov.....	U.S.S.R.....	Moscow.....	Oct. 7, 1955

RUNNING—METRIC DISTANCES

Event	Record	Holder	Home country	Where made	Date
100 meters	10.1 s.	Willie Williams	United States	Berlin	Aug. 3, 1956
200 m.	20 s.	Ira Murchison	United States	Berlin	Aug. 4, 1956
400 m.	45.2 s.	David Sime	United States	Sanger, Calif.	June 9, 1956
800 m.	1 m. 45.7 s.	Louis Jones	United States	Los Angeles	June 30, 1956
1,000 m.	2 m. 19 s.	Roger Moens	Belgium	Oslo	Aug. 3, 1955
1,500 m.	3 m. 40.6 s.	Audun Boysen	Norway	Göteborg, Sweden	Aug. 30, 1955
2,000 m.	5 m. 2.2 s.	Istvan Rozsavolgyi	Hungary	Tata, Hungary	Sept. 21, 1955
3,000 m.	7 m. 52.8 s.	Istvan Rozsavolgyi	Hungary	Tata, Hungary	Aug. 3, 1956
5,000 m.	13 m. 36.8 s.	Gordon Pirie	Great Britain	Budapest	Oct. 2, 1955
10,000 m.	28 m. 30.4 s.	Gordon Pirie	Great Britain	Malmö, Sweden	Sept. 4, 1956
20,000 m.	59 m. 51.6 s.	Vladimir Kuts	U.S.S.R.	Bergen, Norway	June 19, 1956
25,000 m.	1 h. 16 m. 36.4 s.	Emil Zatopek	Czechoslovakia	Moscow	Sept. 11, 1956
30,000 m.	1 h. 35 m. 3.6 s.	Emil Zatopek	Czechoslovakia	Boleslav	Sept. 29, 1951
1 hr.	20,052 meters 40 cm.	Antti Viskari	Finland	Celakovice, Czech.	Oct. 29, 1955
3,000 m. steeplechase	8 m. 35.6 s.	Emil Zatopek	Czechoslovakia	Lappeenranta, Finland	Oct. 21, 1956
		Sandor Rozsnyoi	Hungary	Boleslav	Sept. 29, 1951
				Budapest	Sept. 16, 1956

WALKING—METRIC DISTANCES

Event	Record	Holder	Home country	Where made	Date
3,000 m.	11 m. 51.8 s.	Werner Hardmo	Sweden	Malmö	Sept. 1, 1945
5,000 m.	20 m. 26.8 s.	Werner Hardmo	Sweden	Kumla	July 31, 1945
10,000 m.	42 m. 39.6 s.	Werner Hardmo	Sweden	Kumla	Sept. 9, 1945
15,000 m.	1 h. 5 m. 59.6 s.	J. Dolezal	Czechoslovakia	Boleslav	April 30, 1954
20,000 m.	1 h. 27 m. 58.2 s.	Mikhail Lavrov	U.S.S.R.	Moscow	Aug. 13, 1956
30,000 m.	2 h. 20 m. 40.2 s.	Anatoli Vedjakov	U.S.S.R.	Moscow	Oct. 7, 1955
50,000 m.	4 h. 21 m. 7 s.	Ladislav Moc	Czechoslovakia	Prague	June 21, 1956
1 hr.	13,812 m.	John Mikaelsson	Sweden	Stockholm	Sept. 1, 1945
2 hr.	25,865 m.	Anatoli Vedjakov	U.S.S.R.	Moscow	Oct. 7, 1955

HURDLES (10 hurdles)

Event	Record	Holder	Home country	Where made	Date
120 yd.	13.4 s.	Jack Davis	United States	Bakersfield, Calif.	June 22, 1956
220 yd.	22.2 s.	Jack Davis	United States	Bendigo, Australia	Nov. 17, 1956
440 yd.	51.3 s.	David Sime	United States	Durham, N. C.	May 5, 1956
110 m.	13.4 s.	Yuriy Lituyev	U.S.S.R.	London	Oct. 13, 1954
200 m.	22.2 s.	Jack Davis	United States	Bakersfield, Calif.	June 22, 1956
400 m.	49.5 s.	David Sime	United States	Durham, N. C.	May 5, 1956
		Glenn Davis	United States	Los Angeles	June 29, 1956

RELAY RACES

Event	Record	Holder	Home country	Where made	Date
440 yd. (4 x 110)	40.2 s.	University of Texas	United States	Modesto, Calif.	May 21, 1955
		(F. D. Smith, A. Frieden, J. Prewitt, R. Whilden)			
880 yd. (4 x 220)	1 m. 23.8 s.	National Team	United States	Sydney	Dec. 5, 1956
		(L. King, A. Stanfield, T. Baker, R. Morrow)			
1 mi. (4 x 440 yd.)	3 m. 7.3 s.	National Team	United States	Los Angeles	Nov. 1, 1956
		(C. Jenkins, L. Spurrier, T. Courtney, L. Jones)			
2 mi. (4 x 880)	7 m. 22.9 s.	National Team	United States	Sydney	Dec. 5, 1956
		(J. Walter, L. Spurrier, A. Sowell, T. Courtney)			
4 mi. (4 x 1 mile)	16 m. 41 s.	National Team	Gt. Brit. & No. Ire.	London	Aug. 1, 1953
		(C. Chataway, G. Nankeville, D. Seaman, R. Bannister)			

RELAY RACES—METRIC DISTANCES

Event	Record	Holder	Home country	Where made	Date
400 m. (4 x 100)	39.5 s.	National Team	United States	Melbourne	Dec. 1, 1956
		(T. Baker, L. King, I. Murchison, R. Morrow)			
800 m. (4 x 200)	1 m. 23.8 s.	National Team	United States	Sydney	Dec. 5, 1956
		(L. King, A. Stanfield, T. Baker, R. Morrow)			
1,600 m. (4 x 400)	3 m. 3.9 s.	National Team	Jamaica, B.W.I.	Helsinki	July 27, 1952
		(A. Wint, L. Laing, H. McKenley, G. Rhoden)			
3,200 m. (4 x 800)	7 m. 15.8 s.	National Team	Belgium	Brussels	Aug. 8, 1956
		(A. Bailleux, A. Langenus, E. Leva, R. Moens)			
6,000 m. (4 x 1,500)	15 m. 14.8 s.	Budapest H. S. E.	Hungary	Budapest	Sept. 29, 1955
		(F. Mikes, L. Tabori, I. Rozsavolgyi, S. Iharos)			

FIELD EVENTS

Event	Record	Holder	Home country	Where made	Date
High jump.....	7 ft. ½ in.	Charles Dumas.....	United States	Los Angeles.....	June 29, 1956
Running broad jump.....	26 ft. 8¼ in.	Jesse Owens.....	United States	Ann Arbor.....	May 25, 1935
Hop, step, jump.....	54 ft. 3¾ in.	A. F. da Silva.....	Brazil	Mexico City.....	Mar. 16, 1955
Pole vault.....	15 ft. 7¾ in.	C. Warmerdam.....	United States	Modesto, Calif.....	May 23, 1942
16-lb. shot put.....	63 ft. 1¼ in.	Parry O'Brien.....	United States	Los Angeles.....	Nov. 1, 1956
Discus throw.....	194 ft. 6 in.	Fortune Gordien.....	United States	Pasadena, Calif.....	Aug. 22, 1953
Javelin throw.....	281 ft. 2 in.	Egil Danielsen.....	Norway	Melbourne.....	Nov. 26, 1956
Hammer throw.....	220 ft. 10 in.	Mikhail Krivonosov.....	U.S.S.R.	Tashkent.....	Oct. 22, 1956

DECATHLON

Points	Holder	Home country	Where made	Date
7,985 pts.	Rafer Johnson.....	United States	Kingsburg, Calif.	June 10-11, 1955

WOMEN'S WORLD RECORDS

RUNNING

Event	Record	Holder	Home country	Where made	Date
100 yd.....	10.4 s.	Marjorie Jackson.....	Australia	Sydney.....	Mar. 8, 1952
220 yd.....	23.6 s.	Maria Itkina.....	U.S.S.R.	Kiev.....	July 22, 1956
880 yd.....	2 m. 6.6 s.	Nina Otkalenko.....	U.S.S.R.	Moscow.....	June 10, 1956
60 m.....	7.3 s.	Stella Walasiewicz.....	Poland	Lemberg, Pol.....	Sept. 24, 1933
100 m.....	11.3 s.	Shirley de la Hunty.....	Australia	Warsaw.....	Aug. 4, 1955
200 m.....	23.2 s.	Betty Cuthbert.....	Australia	Sydney.....	Sept. 16, 1956
400 m.....	57 s.	Margaret Mathews.....	Australia	Sydney.....	Jan. 6, 1957
800 m.....	2 m. 5 s.	Nina Otkalenko.....	U.S.S.R.	Zagreb.....	Sept. 24, 1956

RELAY RACES

440 yd. (4 x 110).....	45.6 s.	National Team.....	Australia	Sydney.....	Dec. 5, 1956
(S. de la Hunty, N. Croker, F. Mellor, B. Cuthbert)					
400 m. (4 x 100).....	45.6 s.	National Team.....	Australia	Sydney.....	Dec. 5, 1956
(S. de la Hunty, N. Croker, F. Mellor, B. Cuthbert)					
880 yd. (4 x 220).....	1 m. 36.3 s.	National Team.....	Australia	Sydney.....	Dec. 5, 1956
(M. Mathews, N. Croker, F. Mellor, B. Cuthbert)					
800 m. (4 x 200).....	1 m. 36.3 s.	National Team.....	Australia	Sydney.....	Dec. 5, 1956
(M. Mathews, N. Croker, F. Mellor, B. Cuthbert)					
2,400 m. (3 x 800).....	6 m. 27.6 s.	National Team.....	U.S.S.R.	Moscow.....	Sept. 11, 1955
(N. Otkalenko, L. Lisenko, L. A. Lapshina)					
1½ mi. (3 x 880).....	6 m. 36.2 s.	Hungarian National Team.....		Tata.....	July 21, 1954
(A. Bacskai, A. Oros, A. Kazi)					

HURDLES

80 m.....	10.6 s.	Zenta Gastl.....	Germany	Frenchen.....	July 29, 1956
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FIELD EVENTS

High jump.....	5 ft. 9¼ in.	Mildred McDaniel.....	United States	Melbourne.....	Dec. 1, 1956
Broad jump.....	20 ft. 9¼ in.	E. Dunska-Kreskanska.....	Poland	Budapest.....	Nov. 27, 1956
Shot put.....	54 ft. 11¼ in.	Galina Zybina.....	U.S.S.R.	Tashkent.....	Oct. 13, 1956
Discus throw.....	187 ft. 1½ in. (57 m. 4 cm.)	Nina Dumbadze.....	U.S.S.R.	Tbilisi, U.S.S.R.....	Oct. 18, 1952
Javelin throw.....	182 ft. (55.48 m.)	N. Konjaeva.....	U.S.S.R.	Kiev.....	Aug. 6, 1954

PENTATHLON

4,767 pts.	Nina Vinogradova.....	U.S.S.R.	Moscow.....	Aug. 11-12, 1956
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CASTING

National Records

DISTANCE EVENTS		Feet	½-oz. bait—Tie among J. A. Halblieb, Frank Halper and Don Allen.....	100 pts.
Trout fly (average)—Jack Crossfield.....		186¼		
Trout fly (long cast)—Jack Crossfield.....		194		
Salmon fly (average)—Myron C. Gregory.....		200¼		
Salmon fly (long cast)—Myron C. Gregory.....		212		
¾-oz. bait (average)—Richard R. Ward.....		368		
¾-oz. bait (long cast)—Richard R. Ward.....		386		
¾-oz. bait (average)—Charles L. Schall.....		443		
¾-oz. bait (long cast)—Jon Tarantino.....		453		
ACCURACY EVENTS			COMBINED CHAMPIONSHIPS	
Dry fly—Held by 8 casters.....		100	All accuracy—Casper Rigamer.....	396 pts.
Wet fly—Held by 60 casters.....		100 pts.	Accuracy baits—Casper Rigamer.....	198 pts.
¾-oz. bait—Held by 8 casters.....		99 pts.	Accuracy flies—Donald Meyer and Fred Mathis.....	200 pts.
			All-distance—Jon Tarantino.....	3334 pts.
			Distance baits—William J. Lovely.....	2367 ft.
			Distance flies—Jon Tarantino.....	1114 ft.

History of the Record for the Mile Run

Year	Athlete and country	Where made	Time
1865	Webster, England	England	4:44.3
1866	C. B. Lawes, England	England	4:39.0
1868	W. M. Chinnery, England	England	4:33.2
1871	W. M. Chinnery, England	England	4:31.8
1874	Walter Slade, England	England	4:24.5
1881	Walter George, England	England	4:19.8
1884	Walter George, England	England	4:18.4
1895	F. E. Bacon, England	England	4:17.0
1895	T. P. Conneff, United States	United States	4:15.6
1911	John Paul Jones, United States	United States	4:15.4
1913	John Paul Jones, United States	United States	4:14.4
1915	Norman Taber, United States	United States	4:12.6
1923	Paavo Nurmi, Finland	Sweden	4:10.4
1931	Jules Ladoumegue, France	France	4:09.2
1933	John Lovelock, New Zealand	United States	4:07.6
1934	Glenn Cunningham, United States	United States	4:06.8
1937	Sydney Wooderson, England	England	4:06.4
1942	Gunder Hagg, Sweden	Sweden	4:06.2
1942	Gunder Hagg, Sweden	Sweden	4:04.6
1943	Arne Andersson, Sweden	Sweden	4:02.6
1944	Arne Andersson, Sweden	Sweden	4:01.6
1945	Gunder Hagg, Sweden	Sweden	4:01.4
1954	Roger Bannister, England	England	3:59.4
1954	John Landy, Australia	Finland	3:58.0
1957*	Derek Ibbotson, England	England	3:57.2

* Pending approval.

Four-Minute Mile Becomes Commonplace

The four-minute mile became so commonplace in 1957 that a runner actually beat the once unattainable figure and finished no better than fourth. He was England's Ken Wood, who was clocked in

3:59.3 in a London meet. That day, in Stockholm, Dan Waern of Sweden ran the mile in 3:59.3. The record of miles under 4 minutes:

Time	Runner and country	Site	Date
3:57.2	Derek Ibbotson, England	London, England	July 19, 1957
3:58.0	John Landy, Australia	Turku, Finland	June 21, 1954
3:58.4	Derek Ibbotson, England	Glasgow, Scotland	June 15, 1957
3:58.5	Dan Waern, Sweden	Malmö, Sweden	Sept. 4, 1957
3:58.5	*Roger Moens, Belgium	Malmö, Sweden	Sept. 4, 1957
3:58.6	John Landy, Australia	Melbourne, Australia	Jan. 28, 1956
3:58.6	John Landy, Australia	Melbourne, Australia	April 7, 1956
3:58.6	Jim Bailey, Australia	Los Angeles, Calif.	May 5, 1956
3:58.7	*John Landy, Australia	Los Angeles, Calif.	May 5, 1956
3:58.7	Don Bowden, United States	Stockton, Calif.	June 1, 1957
3:58.7	Derek Ibbotson, England	Naantali, Finland	Aug. 7, 1957
3:58.8	Roger Bannister, England	Vancouver, B. C.	Aug. 7, 1954
3:58.8	*Ron Delany, Ireland	London, England	July 19, 1957
3:59.0	László Tabori, Hungary	London, England	May 28, 1955
3:59.0	Ron Delany, Ireland	Compton, Calif.	June 1, 1956
3:59.0	István Rozsavölgyi, Hungary	Budapest, Hungary	Aug. 26, 1956
3:59.0	Mervyn Lincoln, Australia	Melbourne, Australia	Mar. 23, 1957
3:59.1	John Landy, Australia	Fresno, Calif.	May 12, 1956
3:59.1	*Gunnar Nielsen, Denmark	Compton, Calif.	June 1, 1956
3:59.1	†Stanislav Jungwirth, Czech.	London, England	July 19, 1957
3:59.1	*Olavi Vuorisalo, Finland	Naantali, Finland	Aug. 7, 1957
3:59.3	†Ken Wood, England	London, England	July 19, 1957
3:59.3	Dan Waern, Sweden	Stockholm, Sweden	July 19, 1957
3:59.4	Roger Bannister, England	Oxford, England	May 6, 1956
3:59.4	Derek Ibbotson, England	London, England	Aug. 6, 1954
3:59.6	*John Landy, Australia	Vancouver, B. C.	Aug. 7, 1954
3:59.6	Dan Waern, Sweden	Goteborg, Sweden	Aug. 26, 1957
3:59.7	Dan Waern, Sweden	Malmö, Sweden	Aug. 6, 1957
3:59.8	*Chris Chataway, England	London, England	May 28, 1955
3:59.8	†Brian Hewson, England	London, England	May 28, 1955

* Finished second. † Finished third. ‡ Finished fourth.

BILLIARDS

APPARENTLY nobody knows where billiards originated. Some trace the game back to ancient Greece or early Egyptian days; others insist it originated in France or England in medieval times. Shakespeare must have believed the Egyptian tale, because in *Antony and Cleopatra* he has Cleopatra saying: "Let's to billiards; come, Charmian." There is an illustration of Louis XIV of France playing billiards in 1694 and using a shovel-shaped stick to set the "cue ball" in motion, from which it is evident that the pointed cue was a later development.

Certainly the game was popular in England and on the Continent in the 17th and 18th centuries and early settlers in North America are supposed to have introduced the game here. How to apply

"english" to a billiard ball was discovered by Jack Carr, an Englishman, in 1820. A Frenchman named Mingaud is credited with having invented the "draw" shot at about the same time and also to have devised leather tips for wooden cues. Championship competition, amateur and professional, is a modern development in billiards. The first formal professional tournament held in the United States took place in New York in 1863 with eight players competing. The first three-cushion tournament was held in St. Louis in 1878. The first intercollegiate billiard match, billed as a "Grand Trial of Skill" took place on July 25, 1860, at Worcester, Mass. The freshman class of Harvard defeated the freshman class of Yale.

Billiards Statistics

Source: John Canelli, Secretary, The Billiard Congress of America.

World Three-cushion Champions

1878	Leon Magnus	1912	Joe Carney	1919	Alfredo DeOro	1932	Augie Kieckhefer
1899	W. H. Catton	1912	John Horgan	1919	R. L. Cannafax	1933	Welker Cochran
1900	Eugene Carter	1913-14	Alfredo DeOro	1920	John Layton	1934	John Layton
1900	Lloyd Jevne	1915	George Moore	1921	Augie Kieckhefer	1935	Welker Cochran
1907	Harry P. Cline	1915	William H. Huey	1921-23	John Layton	1936	Willie Hoppe
1908	John Daly	1916	Alfredo DeOro	1923	Tiff Denton	1937	Welker Cochran
1908	Thomas Hueston	1916	Charles Ellis	1924	R. L. Cannafax	1938	Welker Cochran
1908-09	Alfredo DeOro	1916	Charles McCourt	1925	R. L. Cannafax	1939	Joe Chamaco
1910	Fred Eames	1916	Hugh Heal	1926-27	Otto Reisel	1940-44	Willie Hoppe
1910	Alfredo DeOro	1916	George Moore	1927	Augie Kieckhefer	1944	Welker Cochran
1910	John Daly	1917	Charles McCourt	1928	Otto Reisel	1945	Welker Cochran
1910	Thomas Hueston	1917	R. L. Cannafax	1928-29	John Layton	1947-52	Willie Hoppe
1911	John Daly	1917-18	Alfredo DeOro	1930	John Layton	1953	Ray Kilgore
1911	Alfredo DeOro	1918-19	Augie Kieckhefer	1931	Arthur Thurnblad	1954-56	No tournament

THREE-CUSHION RECORDS

High Runs				High Averages—Best Game			
Year	Holder	Event	Points	Year	Holder	Points	Event
1915	Charles Morin.....	Tournament (Pro).....	18	1925	Otto Reisel.....	50 in 16 innings	Interstate League
1919	Tiff Denton.....	Tournament (World).....	17	1925	Otto Reisel.....	100 in 57 innings	Interstate League
1926	John Layton.....	Interstate League.....	18	1925	Otto Reisel.....	150 in 104 innings	Interstate League
1927	Willie Hoppe.....	American League.....	20	1930	John Layton.....	50 in 23 innings	Tournament
1928	Willie Hoppe.....	Exhibition vs. C. C. Peterson	25	1939	Joe Chamaco.....	50 in 23 innings	National League*
1930	Gus Copulos.....	Tournament (World).....	17	1940	Jay N. Bozeman.....	50 in 23 innings	Tournament†
1936	Willie Hoppe.....	Match play.....	15	1947	Willie Hoppe.....	50 in 21 innings	Match
1939	Joe Chamaco.....	National League*.....	18	* No safeties. † Safeties.			
1940	Tiff Denton.....	Tournament (World).....	17	High Grand Average			
1945	Willie Hoppe.....	Match play†.....	20	1950	Willie Hoppe.....	1.33	Tournament

* No safeties. † Safeties. ‡ No safeties; optional cue ball first shot of inning.

National Amateur Three-cushion Champions

Since 1945, tournament has been limited to athletic clubs as identified as the national amateur invitational three-cushion billiard championship.

1910—Pierre Maupome	1927—Robert M. Lord	1931—Frank Flemming	1946—Robert M. Lord
1911—Charles Morin	1927—Dr. L. P. Macklin	1931-35—Edward Lee	1947—Robert M. Lord
1919—Arthur Newman	1928—J. N. Bozeman	1936—Edward Lee*	1948—Robert M. Lord
1920—W. B. Huey	1929—Charles Jordan	1937—A. Primeau	1948—C. T. Vandenovert†
1921—Earl Lookabaugh	1929—Max Shimon	1938—Gene Deardorff	1948-53—Edward Lee
1922—Frank Flemming	1930—Joseph Hall	1939-40—Gene Deardorff	1954—Lee Lerner
1923—Robert M. Lord	1930—Max Shimon	1945-46—C. T. Vandenovert	1955—No tournament
1924—Frank Flemming	1930—R. B. Harper	1946—Edward Lee	1956—Edward Lee
1925-26—Dr. A. J. Harris			

* World champion. † Match.

World Pocket Billiard Champions

1878-80	Cyrille Dion	1899-1900	Alfredo DeOro	1910	Jerome Keogh	1933-34	Erwin Rudolph
1881	Gottlieb Wahlstrom	1901	Frank Sherman	1910-12	Alfredo DeOro	1935	Andrew Ponzi
1882-83	Albert Frey	1901	Alfredo DeOro	1912	R. J. Ralph	1936	James Caras
1884	J. L. Malone	1902	William Clearwater	1913	Alfredo DeOro	1937	Ralph Greenleaf
1886-87	Alfred Frey	1902	Grant Eby	1913-15	Bennie Allen	1938-39	James Caras
1887	J. L. Malone (f)	1903	Alfredo DeOro	1916	Emmet Blankenship	1940	Andrew Ponzi
1887-88	Alfredo DeOro	1904	Alfredo DeOro	1916	John Layton	1941	Willie Mosconi
1888	Frank Powers	1905	Jerome Keogh (f)	1916-18	Frank Taberski	1941	Erwin Rudolph
1889	Albert Frey	1905	Alfredo DeOro	1919-24	Ralph Greenleaf	1942	Irving Crane
1889	Alfredo DeOro	1905	Thomas Hueston (f)	1925	Frank Taberski	1942	Willie Mosconi
1890	H. Manning	1906	Thomas Hueston	1926	Ralph Greenleaf	1943	Andrew Ponzi
1891	Frank Powers (f)	1906	John Horgan	1926	Erwin Rudolph	1943-45	Willie Mosconi
1892-94	Alfredo DeOro	1906	Jerome Keogh	1926	Thomas Hueston	1946	Irving Crane
1895	William Clearwater	1907	Thomas Hueston	1927	Frank Taberski	1946-48	Willie Mosconi
1895	Alfredo DeOro	1908	Thomas Hueston	1927-28	Ralph Greenleaf	1949	Jimmy Caras
1896	Frank Stewart (f)	1908	Frank Sherman	1928	Frank Taberski	1950-53	Willie Mosconi
1897	Grant Eby	1908	Alfredo DeOro	1929	Ralph Greenleaf	1954	No tournament
1897	Jerome Keogh	1909	Charles Weston	1929	Frank Taberski	1955	Irving Crane
1898	William Clearwater	1909	John Kling	1930	Erwin Rudolph	1955	Willie Mosconi
1898	Jerome Keogh	1910	Thomas Hueston	1930-32	Ralph Greenleaf	1956	No tournament

(f) Forfeit.

RECORDS—14.1 POCKET BILLIARDS

HIGH RUNS

HIGH AVERAGES

(Tournament)

Tournament—Ralph Greenleaf, 1929, Detroit.....	126
Tournament—Bennie Allen, 1935, New York.....	125
Tournament—George Kelly, 1935, Minneapolis.....	125
Tournament—Joe Procita, 1954, Philadelphia.....	182
League—Andrew Ponzi, 1939.....	127
Match—Andrew Ponzi, 1934, New York.....	153
Match—Willie Mosconi, 1945.....	127
Match—James Caras, 1946.....	127
Exhibition—Willie Mosconi, 1954.....	526

Single—Ralph Greenleaf, 1929, Detroit.....	63
Grand (4½ x 9)—Willie Mosconi, 1950, Chicago.....	18.34
Grand (5 x 10)—Ralph Greenleaf, 1929, Detroit.....	11.02

BEST GAMES

Ralph Greenleaf (world's championship), 2 innings, vs. Frank Taberski, 1929, Detroit
Willie Mosconi (5 x 10), 2 innings, vs. Arthur Cranfield, 1941
Willie Mosconi, 2 innings, vs. George Chenier, 1952, Boston
Willie Mosconi (world's championship), 2 innings, vs. Luther Lassiter, 1953, San Francisco

Joe Louis' Title Fights

1937

Sept. 29	Lou Nova, Polo Grounds.....	KO 6
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1942

Jan. 9	Buddy Baer, Madison Square Garden.....	KO 1
Mar. 27	Abe Simon, Madison Square Garden.....	KO 6

1946

June 19	Billy Conn, Yankee Stadium.....	KO 8
Sept. 18	Tami Mauriello, Yankee Stadium.....	KO 1

1947

Dec. 5	Joe Walcott, Madison Square Garden.....	W 15
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1948

June 25	Joe Walcott, Yankee Stadium.....	KO 11
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1950

Sept. 27	Ezzard Charles, Yankee Stadium.....	L 15
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LACROSSE

North-South Game Record

1940—North 6, South 5	1950—North 12, South 8
1941—South 7, North 6	1951—North 12, South 11
1942—North 6, South 3	1952—South 15, North 7
1943—South 9, North 5	1953—South 12, North 9
1946—North 14, South 14	1954—North 13, South 11
1947—North 15, South 3	1955—South 12, North 11
1948—North 11, South 6	1956—South 20, North 10
1949—South 11, North 6	

June 22	James J. Braddock, Chicago.....	KO 8
(Won heavyweight championship of the world)		

Aug. 30	Tommy Farr, Yankee Stadium.....	W 15
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1938

Feb. 23	Nathan Mann, Madison Square Garden....	KO 3
Apr. 1	Harry Thomas, Chicago.....	KO 5
June 22	Max Schmeling, Yankee Stadium.....	KO 1

1939

Jan. 25	John Henry Lewis, Madison Sq. Garden....	KO 1
Apr. 17	Jack Roper, Los Angeles.....	KO 1
June 28	Tony Galento, Yankee Stadium.....	KO 4
Sept. 20	Bob Pastor, Detroit.....	KO 11

1940

Feb. 9	Arturo Godoy, Madison Square Garden....	W 15
Mar. 29	Johnny Paycheck, Madison Square Garden..	KO 2
June 20	Arturo Godoy, Yankee Stadium.....	KO 8
Dec. 16	Al McCoy, Boston.....	KO 6

1941

Jan. 31	Red Burman, Madison Square Garden.....	KO 5
Feb. 17	Gus Dorazio, Philadelphia.....	KO 2
Mar. 21	Abe Simon, Detroit.....	KO 13
Apr. 8	Tony Musto, St. Louis.....	KO 9
May 23	Buddy Baer, Washington, D. C.....	W disq. 7
June 18	Billy Conn, Polo Grounds.....	KO 13

SWIMMING

THERE IS THE ancient tale of Leander of Abydos swimming the Hellespont nightly to call on Helen of Sestos but nobody kept the time on his trips. However, Lord Byron swam one leg of the old Leander course, Sestos to Abydos, on May 3, 1810, in 1 hour 10 minutes. The famous British poet was a noted swimmer and once, in an endurance trial at Venice, was in the water for 4 hours 10 minutes. Distance swimming was the early type of competition. Captain Matthew Webb achieved fame by being the first to swim the English Channel—Dover to Calais—in August, 1875, in 21 hours 45 minutes. Many other swimmers, men and women, have conquered the

Channel since that time. Gertrude Ederle, of New York City, was the first woman to accomplish the feat. Miss Ederle swam the Channel Aug. 6, 1926, in 14 hours 34 minutes, breaking the existing record at that time. Since then the record has been lowered by a number of men and women.

Regular competition at short as well as long distances and indoor as well as outdoor came with the development of such organizations as the Amateur Athletic Union and the building of indoor and outdoor swimming pools. Swimming has been on the Olympic program since the start of the modern Olympic Games at Athens in 1896.

WORLD RECORDS

In a move to end confusion over world records, the International Amateur Swimming Federation (F.I.N.A.) began in 1957 to recognize only those marks which are made in 50-meter or 55-yard pools. As of May 1, 1957, all previously recognized records established in pools of other lengths were wiped out. Some of these were replaced when the F.I.N.A. certified new records at a meeting on Aug. 14-15, 1957 but others continued open.

Where no record yet has been authorized for a standard distance, the table of world records below lists the mark as "vacant." The time given in such a case is the lowest the F.I.N.A. will consider for record application for the event.

Men

FREE STYLE

Distance	Record	Holder	Country	Where Made	Date
100 meters.....	0:54.6.....	John Devitt.....	Australia.....	Sydney.....	Jan. 19, 1957
110 yards.....	0:55.2.....	John Devitt.....	Australia.....	Brisbane.....	Jan. 28, 1957
200 meters.....	(vacant—2:05.2)				
220 yards.....	2:05.8.....	Gary Chapman.....	Australia.....	Sydney.....	
400 meters.....	4:27.0.....	Murray Rose.....	Australia.....		
440 yards.....	4:27.1.....	Murray Rose.....	Australia.....	Sydney.....	Jan. 12, 1957
800 meters.....	9:15.7.....	George Breen.....	United States.....	New Haven.....	Oct. 27, 1956
880 yards.....	9:19.2.....	George Breen.....	United States.....	New Haven.....	Oct. 27, 1956
1,500 meters.....	17:52.9.....	George Breen.....	United States.....	Melbourne.....	Dec. 5, 1956
1,650 yards (vacant—17:59.2)					

BREASTSTROKE

100 meters.....	1:11.6.....	C. Lih-Yn.....	China.....	Canton.....	May 1, 1957
110 yards.....	(vacant—1:13.6)				
200 meters.....	(vacant—2:40.0)				
220 yards.....	(vacant—2:41.0)				

BUTTERFLY

100 meters.....	1:01.3.....	Takashi Ishimoto.....	Japan.....	Tokyo.....	July 7, 1957
110 yards.....	(vacant—1:04.0)				
200 meters.....	(vacant—2:19.0)				
220 yards.....	(vacant—2:20.0)				

BACKSTROKE

100 meters.....	1:02.2.....	David Thiele.....	Australia.....	Melbourne.....	Dec. 6, 1956
110 yards.....	(vacant—1:02.6)				
200 meters.....	(vacant—2:20.2)				
220 yards.....	(vacant—2:21.0)				

INDIVIDUAL MEDLEY

400 meters.....	(vacant—5:22.0)				
440 yards.....	(vacant—5:24.0)				

FREE STYLE RELAYS

Distance	Record	Holder	Country	Where Made	Date
400 meters.....	3:46.8	National Team	Japan	Tokyo	Aug. 6, 1955
		(Hiroshi Suzuki, Atsushi Tani, T. Goto, Manabu Koga)			
440 yards.....	(vacant—3:48.8)				
800 meters.....	8:23.6	National Team	Australia	Melbourne	Dec. 3, 1956
		(Kevin O'Halloran, John Devitt, Murray Rose, Jon Henricks)			
880 yards.....	(vacant—8:26.4)				

MEDLEY RELAYS

(Back, Breast, Butterfly, Free Style)

400 meters.....	(vacant—4:18.0)
440 yards.....	(vacant—4:20.0)

Women

FREE STYLE

100 meters.....	1:02.0	Dawn Fraser	Australia	Melbourne	Dec. 1, 1956
110 yards.....	(vacant—1:02.4)				
200 meters.....	(vacant—2:18.5)				
220 yards.....	2:19.1	Lorraine Crapp	Australia	Sydney	Oct. 20, 1956
400 meters.....	(vacant—4:47.2)				
440 yards.....	4:48.6	Lorraine Crapp	Australia	Sydney	Oct. 20, 1956
800 meters.....	10:30.9	Lorraine Crapp	Australia	Sydney	Jan. 14, 1956
880 yards.....	10:34.6	Lorraine Crapp	Australia	Sydney	Jan. 14, 1956
1,500 meters.....	20:03.1	Jans Koster	Netherlands	Hilversum	July 27, 1957
1,650 yards.....	(vacant—20:30.0)				

BREASTSTROKE

100 meters.....	(vacant—1:21.0)				
110 yards.....	(vacant—1:21.6)				
200 meters.....	2:51.3	Ada den Haan	Netherlands	Rhenen	Aug. 4, 1957
220 yards.....	2:52.5	Ada den Haan	Netherlands	Blackpool	May 18, 1957

BUTTERFLY

100 meters.....	1:10.5	Atie Voorbij	Netherlands	Hilversum	Nov. 12, 1956
110 yards.....	(vacant—1:11.6)				
200 meters.....	(vacant—2:43.4)				
220 yards.....	(vacant—2:44.4)				

BACKSTROKE

100 meters.....	1:12.9	Judy Grinham	Great Britain	Melbourne	Dec. 5, 1956
110 yards.....	1:13.2	Greetje Kraan	Netherlands	Blackpool	May 18, 1957
200 meters.....	2:38.5	Lenie de Nijs	Netherlands	Blackpool	May 17, 1957
220 yards.....	2:38.5	Lenie de Nijs	Netherlands	Blackpool	May 17, 1957

INDIVIDUAL MEDLEY

400 meters.....	(vacant—5:49.0)
440 yards.....	(vacant—5:52.0)

FREE STYLE RELAYS

400 meters.....	4:17.1	National Team	Australia	Melbourne	Dec. 6, 1956
		(Dawn Fraser, Faith Leech, Sandra Morgan, Lorraine Crapp)			
440 yards.....	(vacant—4:19.3)				

MEDLEY RELAYS

(Back, Breast, Butterfly, Free Style)

400 meters.....	4:57.0	National Team	Netherlands	Blackpool	May 18, 1957
		(Greetje Kraan, Ada den Haan, Atie Voorbij, C. Gastelaars)			
440 yards.....	4:57.0	National Team	Netherlands	Blackpool	May 18, 1957
		(Greetje Kraan, Ada den Haan, Atie Voorbij, C. Gastelaars)			

West Virginian Crowned Marbles King

Stanley Herold of Summersville, W. Va., won the boys' national championship at the annual national marbles tournament at Asbury Park, N. J., in 1957. The 12-

year-old West Virginian won the title after five days of play against 42 other state and regional champions. Lois Fusco, 13, of Yonkers, N. Y., won the girls' crown.

AUTO RACING

THE FIRST automobiles on the road were erratic in action and driving them or even riding in them was considered a trifle risky, hence it became the sporting thing to do. Experimental excursions in crude cars gave rise to rivalry in speed over the rough roads of the Gay Nineties and this eventually led to formal contests, the first of which was a road race from Paris to Rouen in 1894, with 26 cars showing up at the starting line. Formal competition in the United States started with a road race in the Chicago district on Thanksgiving Day, 1895, and the winner, J. F. Duryea, covered the road distance of 54.36 miles at the astonishing average of 7.5 miles per hour!

Around 1900 Paris became the hub of road racing in Europe and each year there were raucous, dusty and dangerous races from Paris to Berlin, to Vienna, to Madrid

and other cities on the Continent. Accidents were so numerous to drivers and spectators that, after a gory group of mishaps in the forepart of the Paris-Madrid race of 1903, the contest was halted at Bordeaux by public authorities and all road racing was brought under control. Other kinds of auto racing were exposed to view. Some contests, including 24-hour races for stock models, were held on circular or oval tracks originally built for horse racing. Finally came the special racing strips for autos, including such famous autodromes as Brooklands in England and the Indianapolis Speedway in the United States.

As a test of engine and chassis under severe conditions and great strain, auto racing rendered invaluable assistance in the development of the motor car of today.

National Champions

(A. A. A. champions, 1909-1955; U. S. Auto Club champions, 1956.)

1909 Bert Dingley	1923 Eddie Hearne	1937 Wilbur Shaw
1910 Ray Harroun	1924 Jimmy Murphy	1938 Floyd Roberts
1911 Ralph Mulford	1925 Peter DePaolo	1939 Wilbur Shaw
1912 Ralph DePalma	1926 Harry Hartz	1940 Rex Mays
1913 Earl Cooper	1927 Peter DePaolo	1941 Rex Mays
1914 Ralph DePalma	1928 Louis Meyer	1946 Ted Horn
1915 Earl Cooper	1929 Louis Meyer	1947 Ted Horn
1916 Dario Resta	1930 Billy Arnold	1948 Ted Horn
1917 Earl Cooper	1931 Louis Schneider	1949 John Parsons
1918 Ralph Mulford	1932 Bob Carey	1950 Henry Banks
1919 Howard Wilcox	1933 Louis Meyer	1951 Tony Bettenhausen
1920 Gaston Chevrolet	1934 Bill Cummings	1952 Charles Stevenson
1921 Tommy Milton	1935 Kelly Petillo	1953 Sam Hanks
1922 Jimmy Murphy	1936 Mauri Rose	1954 Jimmy Bryan
		1955 Bob Sweikert
		1956 Jimmy Bryan

History of the One-Mile Speed Mark

The first recorded effort for one mile was made in 1898 by Chasseloup-Laubat, driving a Jentaud, in France. His average was 39.23 m.p.h. This was increased to 65.79 in 1899 by Jenatzy, also in France. The first man to travel better than 100 m.p.h. was Rigolly, in 1904, at 103.56 m.p.h., followed by Baras, with 104.53 in the same year. The first over 200 m.p.h. was Major H. O. D. Segrave, who drove at 203.79 in 1927 at Daytona, Florida.

In 1947 John Cobb of London became the first person to travel more than 400 m.p.h. on land. The Englishman accomplished the

feat on Sept. 16 at Bonneville, Utah, while raising the world mile record to 394.196 m.p.h. and the world kilometer (.62137 of a mile) mark to 393.825 m.p.h.

Cobb's fastest mile was covered in 8.93 seconds and his average speed was 9.1325 seconds. The Briton drove at the rate of 385.645 m.p.h. for the mile and 388.019 for the kilometer on the southward run, then increased his pace to 403.135 m.p.h. and 399.808, respectively, on the northward sprint, the best times ever recorded.

Those who drove 300 m.p.h. or better follow (all at Bonneville):

Date	Driver	Car	Average
Sept. 3, 1935	Sir Malcolm Campbell	Bluebird Special	301.1292
Nov. 19, 1937	Capt. G. E. T. Eyston	Thunderbolt #1	311.42
Aug. 27, 1938	Capt. G. E. T. Eyston	Thunderbolt #1	345.5
Sept. 15, 1938	John Cobb	Railton	350.2
Sept. 16, 1938	Capt. G. E. T. Eyston	Thunderbolt #1	357.5
Aug. 23, 1939	John Cobb	Railton Red Lion	368.9
Sept. 16, 1947	John Cobb	Railton Mobil Special	394.196

Indianapolis Motor Speedway Winners

(500-mile race)

Year	Winner	Car	Second	Third	Time	Average m.p.h.
1911	Harroun	Marmon	Mulford	Bruce-Brown	6:42:08	74.59
1912	Dawson	National	Tetzloff	Hughes	6:21:08	78.70
1913	Goux	Peugeot	Wishart	Merz	6:35:05	76.92
1914	Thomas	Delarge	Duray	Guyot	6:03:45	82.47
1915	DePalma	Mercedes	Resta	Anderson	5:33:55	89.84
1916*	Resta	Peugeot	De Aleve	Mulford	3:34:17	83.26
1917-18	No races					
1919	Wilcox	Peugeot	Hearne	Goux	5:40:42	88.06
1920	Chevrolet	Monroe	Thomas	Milton	5:38:32	88.50
1921	Milton	Frontenac	Sarles	Ford	5:34:44	89.62
1922	Murphy	Murphy Special	Hartz	Hearne	5:17:30	94.48
1923	Milton	H. G. S. Special	Hartz	Murphy	5:29:50	90.95
1924	Corum-Boyer	Dusenber Special	Cooper	Murphy	5:05:23	98.23
1925	DePaolo	Dusenber Special	Lewis	Shafer	4:56:39	101.13
1926†	Lockhart	Miller Special	Hartz	Woodbury	4:10:17	95.88
1927	Souders	Duesenberg	Devore	Gulatta	5:07:33	97.54
1928	Meyer	Miller Special	Moore	Souders	5:01:33	99.48
1929	Keech	Simplex Special	Meyer	Gleason	5:07:25	97.58
1930	Arnold	Hartz-Miller	Cantlon	Schneider	4:58:39	100.488
1931	Schneider	Bowes Special	Frame	Hepburn	5:10:28	96.629
1932	Frame	Miller Special	Wilcox	Bergere	4:48:03.79	104.144
1933	Meyer	Miller Special	Shaw	Moore	4:48:12.75	104.089
1934	Cummings	Miller Special	Rose	Moore	4:46:05.20	104.863
1935	Petillo	Gilmore Special	Shaw	Cummings	4:42:22.71	106.240
1936	Meyer	Ring Free Special	Horn	Mackenzie	4:35:03.39	109.069
1937	Shaw	Shaw-Gilmore Special	Hepburn	Horn	4:24:07.80	113.580
1938	Roberts	Burd Piston Reg. Special	Shaw	Miller	4:15:58.40	117.200
1939	Shaw	Boyle Special	Snyder	Bergere	4:20:47.39	115.035
1940	Shaw	Boyle Special	Mays	Rose	4:22:31.17	114.277
1941	Rose-Davis‡	Noc-Out Hose Clamp Special	Mays	Horn	4:20:36.24	115.117
1942-45	No races					
1946	Robson	Thorne Eng. Special	Jackson	Horn	4:21:16.71	114.820
1947	Rose	Blue Crown Special	Holland	Horn	4:17:52.17	116.338
1948	Rose	Blue Crown Special	Holland	Nalon	4:10:23.38	119.813
1949	Holland	Blue Crown Special	Parsons	Connor	4:07:15.97	121.327
1950§	Parsons	Wynn's Fiction Proof Spl.	Holland	Rose	2:46:55.97	124.002
1951	Wallard	Belanger Special	Nazaruk	McGrath-Ayulo	3:57:38.05	126.244
1952	Ruttman	Agajanian Special	Rathmann	Hanks	3:52:41.88	128.922
1953	Vukovich	Fuel Injection Spl.	Cross	Hanks-Carter	3:53:01.69	128.740
1954	Vukovich	Fuel Injection Spl.	Bryan	McGrath	3:49:17.27	130.840
1955	Sweikert	John Zink Special	Bettenhausen	Davies	3:53:59.53	128.208
1956	Flaherty	John Zink Special	Hanks	Freeland	3:53:28.84	128.490

* 300 miles. † Race ended at 400 miles owing to heavy rain. ‡ Davis drove 180 miles, Rose 320. § 1960 race ended at 345 miles because of rain.

1957 INDIANAPOLIS SPEEDWAY 500-MILE RACE

Leading Finishers

Pos.	Driver	Car	Time	M.P.H.	Earnings
1.	Sam Hanks, Pacific Palisades, Calif.	Belond Exhaust Spl.	3:41:14.25	135.601	\$103,844
2.	Jim Rathmann, Miami, Fla.	Chiropractic Spl.	3:41:35.75	135.382	38,494
3.	Jimmy Bryan, Phoenix, Ariz.	Dean Van Lines Spl.	3:43:28.25	134.246	21,794
4.	Paul Russo, Canoga Park, Calif.	Novi Auto Air Cond. Spl.	3:44:11.10	133.818	19,369
5.	Andy Linden, Indianapolis	McNamara Veedol Spl.	3:44:28.55	133.645	11,094
6.	Johnny Boyd, Fresno, Calif.	Bowes Seal Fast Spl.	3:45:49.55	132.846	8,194
7.	Marshall Teague, Daytona Beach, Fla.	Sumar Spl.	3:45:59.85	132.745	6,819
8.	Pat O'Connor, North Vernon, Ind.	Sumar Spl.	3:46:47.35	132.281	8,619
9.	Bob Veith, Oakland, Calif.	Bob Estes Spl.	3:47:31.35	131.855	5,969
10.	Gene Hartley, Indianapolis	Massaglia Hotels Spl.	3:48:24.40	131.345	5,844

Hanks Shatters "500" Speed Records

Sam Hanks, 42-year-old auto racing driver, broke all records for the Indianapolis 500-mile race when he won the 41st running of the event on Memorial Day in 1957. Traveling the 200 laps in 3 hours 41 minutes 14.25 seconds, Hanks hit an

average speed of 135.601 miles an hour, eclipsing the old record of 130.840 miles an hour set by the late Bill Vukovich in 1954. The victory was Hanks' first in the Indianapolis event. It was his 12th start. In 1956 he placed second.

MOTORBOATING

SINCE the source of power—the internal combustion engine—is the same in the motorboat as it is in the automobile, the history of motorboat racing parallels that of auto racing. There was a sporting risk in driving the early power boats. As soon as they began to show a degree of dependability, there came the informal rivalries of the rivers and lakes. These led to the formal contests of speed and endurance

over marked courses under the control of the American Power Boat Association. The races were severe tests of all parts of power boats and what was learned in the annual Gold Cup competition, which started in 1904, caused a great improvement in the designing of engines and hulls. The development of the outboard motor opened up another branch of power boat competition of wide popularity.

Motorboating Statistics

Source: Bernadette M. Harper, Executive Secretary, American Power Boat Association.

GOLD CUP WINNERS

Beginning with 1922 the race for the American Power Boat Association Gold Cup was open only to displacement boats of over 25 feet in length and powered with motors of not more than 625 inches piston displacement.

In 1945 the rules were liberalized to encourage the entry of smaller, less expensive craft. Boats now are required to be between 10 and 40 feet in length, with horsepower unlimited.

Year	Winner and owner	Best heat m.p.h.	Year	Winner and owner	Best heat m.p.h.
1904—STANDARD, C. C. Riotte.....		23.6	1927—GREENWICH FOLLY, G. H. Townsend.....		50.99
1904—VINGT-ET-UN II, W. Sharpe Kilmer.....		25.3	1929—IMP, R. F. Hoyt.....		50.489
1905—CHIP, J. Wainwright.....		15.9	1930—HOTSY TOSY, V. Kliesrath.....		56.05
1906—CHIP II, J. Wainwright.....		20.6	1931—HOTSY TOSY, V. Kliesrath-R. Hoyt.....		54.92
1907—CHIP II, J. Wainwright.....		20.8	1932—DELPHINE IV, Horace E. Dodge.....		59.21
1908—DIXIE II, E. J. Schroeder.....		30.9	1933—EL LAGARTO, G. Reis.....		60.866
1909—DIXIE II, E. J. Schroeder.....		32.9	1934—EL LAGARTO, G. Reis.....		58.06
1910—DIXIE III, F. K. Burnham.....		33.6	1935—EL LAGARTO, G. Reis.....		57.582
1911—MIT II, J. H. Hayden.....		36.1	1936—IMPSHI, Horace E. Dodge.....		47.120
1912—P. D. Q. II, Alfred G. Miles.....		44.5	1937—NOTRE DAME, Herbert Mendelson.....		68.645
1913—ANKLE DEEP, C. S. Mankowski.....		50.49	1938—ALAGI, Theo Rossi.....		66.08
1914—BABY SPEED DEMON II, Paula Blackton.....		48.5	1939—MY SIN, Z. G. Simmons Jr.....		67.05
1915—MISS DETROIT, Miss Detroit P. B. A.....		49.7	1940—HOTSY TOSY III, Sidney Allen.....		51.316
1916—MISS MINNEAPOLIS, Miss Minneapolis B. A.....		36.8	1941—MY SIN, Z. G. Simmons Jr.....		52.509
1917—MISS DETROIT II, Gar Wood.....		56.5	1946—TEMPO VI, Guy Lombardo.....		70.878
1918—MISS DETROIT III, Detroit Yachtsmen.....		52.1	1947—MISS PEPSI V, Dossin Brothers.....		57.02
1919—MISS DETROIT III, Gar Wood.....		56.3	1948—MISS GREAT LAKES, Albin Fallon.....		52.89
1920—MISS AMERICA, Gar Wood.....		70.0	1949—MY SWEETIE, E. Gregory-E. Schoenherr.....		78.645
1921—MISS AMERICA, Gar Wood.....		56.5	1950—SLO-MO-SHUN IV, Stanley S. Sayres.....		80.892
1922—PACKARD-CHRISRAFT, J. G. Vincent.....		40.6	1951—SLO-MO-SHUN V, Stanley S. Sayres.....		91.766
1923—PACKARD-CHRISRAFT, J. G. Vincent.....		44.4	1952—SLO-MO-SHUN IV, Stanley S. Sayres.....		84.355
1924—BABY BOOTLEGGERS, Caleb Bragg.....		46.4	1953—SLO-MO-SHUN IV, Stanley S. Sayres.....		95.268
1925—BABY BOOTLEGGERS, Caleb Bragg.....		48.4	1954—SLO-MO-SHUN V, Stanley S. Sayres.....		99.784
1926—GREENWICH FOLLY, G. H. Townsend.....		49.22	1955—GALE V, Joseph Schoenith.....		100.954
			1956—MISS THRIFTWAY, Willard Rhodes.....		100.906

HARMSWORTH TROPHY WINNERS

Year	Boat and Country	Speed*	Year	Boat and Country	Speed*
1903—NAPIER I, France.....		19.53	1921—MISS AMERICA II, United States.....		59.75
1904—TREFLE-A-QUATRE, England.....		26.63	1926—MISS AMERICA V, United States.....		61.118
1905—NAPIER II, England.....		26.03	1928—MISS AMERICA VII, United States.....		59.325
1906—YARROW-NAPIER, England.....		15.48	1929—MISS AMERICA VIII, United States.....		75.287
1907—DIXIE I, United States.....		31.78	1930—MISS AMERICA IX, United States.....		77.233
1908—DIXIE II, United States.....		31.347	1931—MISS AMERICA VIII, United States.....		85.861
1910—DIXIE III, United States.....		36.04	1932—MISS AMERICA X, United States.....		78.489
1911—DIXIE IV, United States.....		40.28	1933—MISS AMERICA X, United States.....		86.939
1912—MAPLE LEAF IV, England.....		43.18	1949—SKIP-A-LONG, United States.....		94.285
1913—MAPLE LEAF IV, England.....		57.45	1950—SLO-MO-SHUN IV, United States.....		100.680
1920—MISS AMERICA I, United States.....		61.51	1956—SHANTY I, United States.....		94.772

* In statute miles per hour.

† First of hydroplanes to win, predecessors being all displacement craft.

U. S. MOTORBOAT RECORDS

ONE MILE

Class	M.P.H.	Boat and Owner or Driver	Place	Year
U.I.M. jet.....	216.25	BLUEBIRD, Donald Campbell	Boulder City, Nev.	1955
Unlimited hydro.....	178.497	SLO-MO-SHUN IV, Stanley Sayres	Seattle, Wash.	1952
7 litre.....	133.399	MISS DE SOTO IV, George Byers, Jr.	Hollywood, Fla.	1956
266 hydro.....	132.600	ZZ ZIP, Sid Street	Hollywood, Fla.	1956
225 hydro.....	111.472	JERSEY DEVIL, Ronald Smith	Hollywood, Fla.	1956
136 hydro.....	83.899	JERKY, Bob Boehm	Salton Sea, Calif.	1955
135 hydro.....	101.373	SCREAMING EAGLE IV, Bud Holloway	Salton Sea, Calif.	1954
91 hydro.....	78.202	DRAGON, Sam Crooks	Miami, Fla.	1953
48 hydro.....	87.135	TINKERTOY, Duane Allen	Salton Sea, Calif.	1954
Pacific one design hydro.....	62.745	LITTLE BEAVER, Marion Beaver	Salton Sea, Calif.	1953
Cracker box.....	84.215	NO GO, Paul L. Pierce	New Martinsville, W. Va.	1956
44 cu. in. runabout.....	50.74	YANKEE BOY, Robert McAllister	New Martinsville, W. Va.	1953
Jersey speed skiff.....	56.604	JO CAROL TOO, Dan Ardolino	New Martinsville, W. Va.	1954
B rac. inb. run.....	72.547	LIL BEE, Ernest Rose	Seattle, Wash.	1955
D ser. inb. run.....	57.464	SKIP, Harry Bickford	Elizabeth City, N. C.	1955
E rac. inb. run.....	89.563	BOUNCY BARBY III, Ed Brown	Salton Sea, Calif.	1956
E ser. inb. run.....	59.729	SKIP-E, Harry Bickford	Clarksville, Va.	1956
F serv. inb. run.....	60.101	TOO MUCH, James Venner	Cambridge, Md.	1957
K rac. inb. run.....	69.438	BEAVER II, Gene Gatter	Ocean City, N. J.	1950
M out. hydro.....	42.303	..... Eleanor Shakeshaft	Lake Alfred, Fla.	1949
A out. hydro.....	61.069	GOTTA GO VI, Jack Leek	Seattle, Wash.	1955
B out. hydro.....	67.296	HORNET, W. L. Tenney	Clarksville, Va.	1954
C out. hydro.....	68.631	HORNET XIII, W. L. Tenney	Seattle, Wash.	1954
C ser. out. hydro.....	57.678	HUBBA HUBBA, Lightle Samsel	Seattle, Wash.	1954
F out. hydro.....	75.402	ROSS GO, Burt Ross	DeLake, Ore.	1954
C serv. out. run.....	51.613	MISS SANTA BARBARA, Tom Newton	San Diego, Calif.	1949

FIVE MILES IN COMPETITION

Unlimited hydro (10N).....	111.742	SLO-MO-SHUN IV, Lou Fageol	Seattle, Wash.	1951
7 litre.....	86.289	SEVEN GRAND, B. Greer-K. Black	Lake Mead, Nev.	1956
266 hydro.....	*87.976	WA WA TOO, Ron Musson	Norristown, Pa.	1957
225 hydro.....	80.573	MY SIN III, Henry Vogel	New Martinsville, W. Va.	1957
136 hydro.....	*66.470	JERKY, Bob Boehm	Newport Beach, Calif.	1957
135 hydro.....	77.519	LITTLE JOE, Morlan Visel	Salton Sea, Calif.	1951
91 hydro.....	60.688	PORKY, E. Burt Davidson	St. Petersburg, Fla.	1956
48 hydro.....	67.821	LITTLE RACKET II, J. A. Colcock	Seattle, Wash.	1956
Pacific one design hydro.....	57.216	LITTLE BEAVER, Marion Beaver	Salton Sea, Calif.	1953
Cracker box.....	68.002	HOT CINDERS, Bob Patterson	Seattle, Wash.	1955
44 cu. in. run.....	44.280	YANKEE BOY, Robert McAllister	Red Bank, N. J.	1953
Jersey speed skiff.....	46.153	SLO POKE, James Camp	Red Bank, N. J.	1953
B rac. inb. run.....	61.517	LIL' BEE, Ernest Rose	Salton Sea, Calif.	1956
D ser. inb. run.....	50.719	SKIP, Harry Bickford	Buffalo, N. Y.	1954
E ser. inb. run.....	55.624	SKIP-E, Harry Bickford	Elizabeth City, N. C.	1956
E rac. inb. run.....	73.409	BOUNCY BARBY III, Ed Brown	Lake Mead, Nev.	1956
F ser. inb. run.....	*55.9875	PROWLER, JR., Howard Hibbert	Buffalo, N. Y.	1957
K rac. inb. run.....	56.426	GEN VI, David Gerli	Washington, D. C.	1940
M out. hydro.....	39.045	THUM, R. D. Frawley	Lake Alfred, Fla.	1953
A out. hydro.....	51.517	..... Bob McGinty	Lakeland, Fla.	1957
B out. hydro.....	58.631	HORNET, William Tenney	Lakeland, Fla.	1957
C out. hydro.....	68.966	HORNET XV, William Tenney	Lakeland, Fla.	1957
C ser. out. hydro.....	51.078	HUBBA HUBBA, Lightle Samsel	Devils Lake, Ore.	1953
F out. hydro.....	66.568	HIGHFLAME, Bud Widget	Lakeland, Fla.	1957
C ser. out. run.....	49.669	CROSSWIND, Bud Widget	Lakeland, Fla.	1957

HISTORIC PERFORMANCES IN COMPETITION

Event (distance)	M.P.H.	Boat and Owner or Driver	Place	Year
Gold Cup lap (3).....	*113.804	MISS WAHOO, Mira Slovak	Seattle, Wash.	1957
Gold Cup heat (30).....	*109.823	HAWAII KAI III, Jack Regas	Seattle, Wash.	1957
Gold Cup race (90).....	*101.979	MISS THRIFTWAY, Bill Muncey	Seattle, Wash.	1957
Harmsworth lap (5N).....	102.676	SLO-MO-SHUN IV, Lou Fageol	Detroit	1950
Harmsworth heat (40N).....	100.181	SLO-MO-SHUN IV, Lou Fageol	Detroit	1950
Harmsworth race (80N).....	95.623	SLO-MO-SHUN IV, Lou Fageol	Detroit	1950
President's Cup lap (3).....	*109.091	HAWAII KAI III, Jack Regas	Washington, D. C.	1957
President's Cup heat (15).....	*107.441	HAWAII KAI III, Jack Regas	Washington, D. C.	1957
President's Cup race (45).....	*105.799	HAWAII KAI III, Jack Regas	Washington, D. C.	1957
Silver Cup lap (3).....	*113.648	HAWAII KAI, Jack Regas	Detroit	1957
Silver Cup heat (12).....	*108.303	MAVERICK, Bill Stead	Detroit	1957
Silver Cup race (60).....	*105.168	HAWAII KAI III, Jack Regas	Detroit	1957

* Pending approval.

SQUASH RACQUETS

Source: United States Squash Racquets Association.

National Singles Champions

1907-08.....	John A. Miskey, Overbrook G. C.	1932.....	Beekman Pool, Harvard University
1909.....	W. L. Freeland, Germantown C. C.	1933.....	Beekman Pool, Harvard Club, New York
1910.....	John A. Miskey, Overbrook G. C.	1934.....	Neil J. Sullivan, Germantown C. C.
1911.....	F. S. White, Germantown C. C.	1935.....	Donald Strachan, Philadelphia C. C.
1912.....	Constantine Hutchins, Boston A. A.	1936.....	Germain G. Glidden, Harvard University
1913.....	Mortimer L. Newhall, Germantown C. C.	1937-38.....	Germain G. Glidden, Harvard Club, New York
1914.....	Constantine Hutchins, Boston T. and R. Club	1939.....	Donald Strachan, Merion C. C.
1915-17.....	Stanley W. Pearson, Germantown C. C.	1940.....	A. Willing Patterson, Philadelphia R. C.
1918-19.....	No tournaments	1941-42.....	Charles W. Brinton, Princeton University
1920.....	Charles C. Peabody, Union B. C., Boston	1943-45.....	No tournaments
1921-23.....	Stanley W. Pearson, Philadelphia R. C.	1946-47.....	Charles W. Brinton, Philadelphia
1924.....	Gerald Roberts, Bath Club, London	1948.....	Stanley W. Pearson, Jr., Philadelphia
1925.....	W. Palmer Dixon, Harvard University	1949.....	Hunter H. Lott, Jr., Merion C. C.
1926.....	W. Palmer Dixon, R. and T. Club, N. Y.	1950-51.....	Edward Hahn, Detroit
1927.....	Myles P. Baker, Boston A. A.	1952.....	Harry Conlon, Buffalo, N. Y.
1928.....	Herbert N. Rawlins, Jr., R. and T. Club, N. Y.	1953.....	Ernie Howard, Toronto
1929.....	J. Lawrence Pool, Harvard Club, New York	1954.....	G. Diehl Mateer, Jr., Philadelphia
1930.....	Herbert N. Rawlins, Jr., R. and T. Club, N. Y.	1955.....	Henri Salaun, Boston
1931.....	J. Lawrence Pool, Harvard Club, New York	1956.....	G. Diehl Mateer, Jr., Philadelphia

RACQUETS

Source: Allison Danzig, *The New York Times*.

National Champions

1890	B. Spalding de Garmendia, N. Y. Racquet Court	1917	C. C. Pell, R. and T. Club and Tuxedo
1891	B. Spalding de Garmendia, R. and T. Club	1918-19	No tournaments
1892	J. S. Tooker, R. and T. Club, Boston A. A.	1920-22	C. C. Pell, R. and T. Club and Tuxedo
1893-94	B. Spalding de Garmendia, R. and T. Club	1923	S. G. Mortimer, R. and T. Club and Tuxedo
1895	J. S. Tooker, R. and T. Club, Boston A. A.	1924-25	C. C. Pell, R. and T. Club and Tuxedo
1896-97	B. Spalding de Garmendia, R. and T. Club	1926	S. G. Mortimer, R. and T. Club and Tuxedo
1898	F. F. Rolland, Canada	1927-28	C. C. Pell, R. and T. Club and Tuxedo
1899	Quincy A. Shaw, Jr., Boston A. A.	1929	H. D. Sheldon, R. and T. Club
1900	Eustace H. Miles, England	1930	S. G. Mortimer, R. and T. Club and Tuxedo
1901	Quincy A. Shaw, Jr., Boston A. A.	1931-33	C. C. Pell, R. and T. Club and Tuxedo
1902	Clarence H. Mackay, R. and T. Club	1934	E. M. Edwards, Philadelphia R. C.
1903	Payne Whitney, R. and T. Club	1935	H. D. Sheldon, R. and T. Club
1904	George H. Brooke, Philadelphia R. C.	1936	E. M. Edwards, Philadelphia R. C.
1905	Lawrence Waterbury, R. and T. Club	1937-39	Robert Grant, III, R. and T. Club
1906	Percy D. Haughton, R. and T. Club	1940	Warren Ingersoll, III, Philadelphia R. C.
1907	Reginald Fincke, R. and T. Club	1941	Robert Grant, III, R. and T. Club
1908	Quincy A. Shaw, Jr., Boston T. and R. Club	1942-45	No tournaments
1909	H. F. McCormick, University Club, Chicago	1946	Robert Grant, III, R. and T. Club
1910	Quincy A. Shaw, Jr., Boston T. and R. Club	1947	J. Richards Leonard, R. and T. Club
1911-12	Reginald Fincke, R. and T. Club	1948-51	Robert Grant, III, R. and T. Club
1913-14	Lawrence Waterbury, R. and T. Club	1952	S. W. Pearson, Jr., Philadelphia R. C.
1915	C. C. Pell, R. and T. Club and Tuxedo	1953	Robert Grant, III, R. and T. Club
1916	S. G. Mortimer, R. and T. Club and Tuxedo	1954-56	Geoffrey W. T. Atkins, Chicago

COURT TENNIS

Source: Allison Danzig, *The New York Times*.

National Champions

1892	Richard D. Sears, Boston A. A.	1928-29	Hewitt Morgan, R. and T. Club
1893	Fiske Warren, Boston A. A.	1930	Lord Aberdare, England
1894-95	B. Spalding de Garmendia, R. and T. Club	1931-32	William C. Wright, Philadelphia
1896	Lawrence M. Stockton, Boston A. A.	1933	James H. Van Alen, R. and T. Club
1897	George R. Fearing, Jr., Boston A. A.	1934-37	Ogden Phipps, R. and T. Club
1898-99	Lawrence M. Stockton, Boston A. A.	1938	James H. Van Alen, R. and T. Club
1900	Eustace H. Miles, England	1939	Ogden Phipps, R. and T. Club
1901-04	Joshua Crane, Boston A. A.	1940	James H. Van Alen, R. and T. Club
1905	Charles E. Sands, R. and T. Club	1941	Alastair B. Martin, R. and T. Club
1906-17	Jay Gould, Philadelphia R. C.	1942-45	No tournaments
1918-19	No tournaments	1946	Robert Grant, III, R. and T. Club
1920-25	Jay Gould, Philadelphia R. C.	1947	E. M. Beals, Jr., Boston
1926	C. Suydam Cutting, R. and T. Club	1948-49	Ogden Phipps, Roslyn, N. Y.
1927	George Huband, England, and Chicago R. C.	1950-56	Alastair B. Martin, R. and T. Club

POLO

POLO originated "somewhere east of Suez" but exactly where never has been determined. There is pictorial proof that it was played many centuries ago in Persia, Japan, China and Tibet, but it reached England by way of a border tribe in India known as the Manipuri. British army officers in India, about 1860, found the Manipuri playing polo and learned the game from them. The fact that the Manipuri used small native horses—they had no others—was the reason for the early height limit (14 hands) on polo mounts, from which arose the custom of calling them "polo ponies," which was abandoned in 1919.

In 1869 some officers of the 10th Hussars, returning from India, introduced the game in England and informal games were played with as many as eight players on a side. Formal competition at Hurlingham, the great shrine of the game, began in 1876 with five players on a side, which

number was cut to four in 1882. In 1884 an outstanding English player by the name of John Watson invented the backhand stroke and much improved the tactics of the game.

James Gordon Bennett, Jr., noted American newspaper owner and editor, saw polo at Hurlingham in 1875, brought the implements to this country, had a carload of cow ponies sent up from Texas and promoted a game that was played indoors at the Dickel Riding Academy at Fifth Avenue and 39th Street, New York City, in 1876. Polo moved outdoors to the Jerome Park race course and other suitable places soon after. One field on which it was played, at Fifth Avenue and 110th Street, was taken over by the New York baseball team in the National League and that is why the field on which the "Giants" play ball, although there since have been two changes in site, still is called "the Polo Grounds."

INTERNATIONAL MATCHES

Great Britain vs. United States

Year	Winner	Site
1886	Great Britain	Newport, R. I.
1902	Great Britain	Hurlingham
1909	United States	Hurlingham
1911	United States	Meadow Brook
1913	United States	Meadow Brook
1914	Great Britain	Meadow Brook
1921	United States	Hurlingham
1924	United States	Meadow Brook
1927	United States	Meadow Brook

Year	Winner	Site
1930	United States	Meadow Brook
1936	United States	Hurlingham
1939	United States	Meadow Brook

Argentina vs. United States

Year	Winner	Site
1928	United States	Meadow Brook
1932	United States	Buenos Aires
1936	Argentina	Meadow Brook
1950	Argentina	Buenos Aires

SQUASH TENNIS

National Champions

Year	Winner and Club
1911-12	Alfred Stillman, Harvard
1913	George Whitney, Harvard
1914	Alfred Stillman, Harvard
1915-17	Eric S. Winston, Harvard
1918	Fillmore Van S. Hyde, Harvard
1919	John W. Appel, Jr., Harvard
1920	Auguste J. Cordier, Yale
1921	Fillmore Van S. Hyde, Harvard
1922	Thomas R. Coward, Yale
1923	R. Earl Fink, Crescent
1924	Fillmore Van S. Hyde, Harvard
1925	William Rand, Jr., Harvard
1926	Fillmore Van S. Hyde, Harvard
1927-29	Rowland B. Haines, Columbia
1930-37	Harry F. Wolf, New York A. C.

Year	Winner and Club
1938	Harry F. Wolf, Montclair
1939-40	Harry F. Wolf, New York A. C.
1941	Joseph J. Lordi, New York A. C.
1942	H. Robert Reeve, Bayside T. C.
1943-45	No tournaments
1946	Frank R. Hanson, Columbia
1947	Frederick B. Ryan, Jr., Yale
1948-49	H. Robert Reeve, Bayside T. C.
1950	H. Robert Reeve, Nassau C. C.
1951	J. T. P. Sullivan, Yale
1952	H. Robert Reeve, New York A. C.
1953	Howard J. Rose, Princeton Club
1954-55	H. Robert Reeve, Bayside T. C.
1956	H. Robert Reeve, New York A. C.

La. Institute Wins Weight Title

Southwestern Louisiana Institute won the national collegiate weightlifting championship in 1957. The Louisiana weightmen scored 22½ points. The University of Hawaii was second with 10.

300s, Back to Back

Ned Day, former national individual match bowling champion, rolled two successive 300 games in 1957. They brought to 83 the number of perfect games he has bowled.

NATIONAL OPEN POLO CHAMPIONS

Not held from 1905 to 1909, inclusive; 1911, 1915, 1917, 1918, and from 1942 to 1945, inclusive.

1904—WANDERERS

- 1—C. R. Snowden
- 2—J. E. Cowdin
- 3—J. M. Waterbury, Jr.
- Back—L. Waterbury

1910—RANELAGH

- 1—R. N. Grenfell
- 2—F. Grenfell
- 3—Earl of Rocksavage
- Back—F. A. Gill

1912—COOPERSTOWN

- 1—F. S. von Stade
- 2—C. C. Rumsey
- 3—C. P. Beadleston
- Back—M. Stevenson

1913—COOPERSTOWN

- 1—F. S. von Stade
- 2—C. C. Rumsey
- 3—C. P. Beadleston
- Back—M. Stevenson

1914—MEADOW BROOK
MAGPIES

- 1—N. L. Tilney
- 2—J. W. Webb
- 3—W. G. Loew
- Back—H. Phipps

1916—MEADOW BROOK

- 1—H. Phipps
- 2—C. C. Rumsey
- 3—W. G. Loew
- Back—D. Milburn

1919—MEADOW BROOK

- 1—F. H. Prince, Jr.
- 2—J. W. Webb
- 3—F. S. von Stade
- Back—D. Milburn

1920—MEADOW BROOK

- 1—F. S. von Stade
- 2—J. W. Webb
- 3—R. E. Strawbridge, Jr.
- Back—D. Milburn

1921—GREAT NECK

- 1—L. E. Stoddard
- 2—R. Wanamaker, II
- 3—J. W. Webb
- Back—R. E. Strawbridge, Jr.

1922—ARGENTINE

- 1—J. B. Miles
- 2—J. D. Nelson
- 3—D. B. Miles
- Back—L. L. Lacey

1923—MEADOW BROOK

- 1—R. Belmont
- 2—T. Hitchcock, Jr.
- 3—R. E. Strawbridge, Jr.
- Back—D. Milburn

1924—MIDWICK

- 1—E. G. Miller
- 2—E. L. Pedley
- 3—A. P. Perkins
- Back—C. F. Burke

1925—ORANGE COUNTY

- 1—W. A. Harriman
- 2—J. W. Webb
- 3—M. Stevenson
- Back—J. C. Cowdin

1926—HURRICANES

- 1—S. Sanford
- 2—E. L. Pedley
- 3—Capt. C. T. I. Roark
- Back—R. E. Strawbridge, Jr.

1927—SANDS POINT

- 1—W. A. Harriman
- 2—T. Hitchcock, Jr.
- 3—J. C. Cowdin
- Back—L. E. Stoddard

1928—MEADOW BROOK

- 1—C. V. Whitney
- 2—W. F. C. Guest
- 3—J. B. Miles
- Back—M. Stevenson

1929—HURRICANES

- 1—S. Sanford
- 2—Capt. C. T. I. Roark
- 3—J. W. Webb
- Back—R. E. Strawbridge, Jr.

1930—HURRICANES

- 1—S. Sanford
- 2—E. L. Pedley
- 3—Capt. C. T. I. Roark
- Back—R. E. Strawbridge, Jr.

1931—SANTA PAULA

- 1—A. Gazzotti
- 2—José Reynal
- 3—Juan Reynal
- Back—M. Andrada

1932—TEMPLETON

- 1—M. G. Phipps
- 2—W. F. C. Guest
- 3—S. B. Iglehart
- Back—R. R. Guest

1933—AURORA

- 1—S. H. Knox
- 2—J. P. Mills
- 3—E. T. Gerry
- Back—E. J. Boeseke, Jr.

1934—TEMPLETON

- 1—M. G. Phipps
- 2—W. F. C. Guest
- 3—S. B. Iglehart
- Back—R. R. Guest

1935—GREENTREE

- 1—G. H. Bostwick
- 2—T. Hitchcock, Jr.
- 3—G. Balding
- Back—J. H. Whitney

1936—GREENTREE

- 1—G. H. Bostwick
- 2—G. Balding
- 3—T. Hitchcock, Jr.
- Back—J. H. Whitney

1937—OLD WESTBURY

- 1—M. G. Phipps
- 2—C. C. Smith
- 3—S. B. Iglehart
- Back—C. V. Whitney

1938—OLD WESTBURY

- 1—M. G. Phipps
- 2—C. C. Smith
- 3—S. B. Iglehart
- Back—C. V. Whitney

1939—BOSTWICK FIELD

- 1—G. H. Bostwick
- 2—R. L. Gerry, Jr.
- 3—E. T. Gerry
- Back—E. H. Tyrrell-Martin

1940—AKNUSTI

- 1—G. S. Smith
- 2—R. L. Gerry, Jr.
- 3—E. T. Gerry
- Back—A. L. Corey, Jr.

1941—GULF STREAM

- 1—J. H. A. Phipps
- 2—M. G. Phipps
- 3—C. S. von Stade
- Back—A. L. Corey, Jr.

1946—HERRADURA

- 1—Gabriel Gracida
- 2—Guillermo Gracida
- 3—Alejandro Gracida
- Back—José Gracida

1947—OLD WESTBURY

- 1—P. Silvero
- 2—C. C. Combs
- 3—S. B. Iglehart
- Back—G. Oliver

1948—HURRICANES

- 1—L. Sheerin
- 2—P. Perkins
- 3—C. Smith
- Back—S. Sanford

1949—HURRICANES

- 1—L. Sheerin
- 2—R. Cavanaugh
- 3—C. Smith
- Back—S. Sanford

1950—BOSTWICK FIELD

- 1—G. H. Bostwick
- 2—George Oliver
- 3—A. L. Corey, Jr.
- Back—D. Milburn, Jr.

1951—MILWAUKEE

- 1—Pedro Silvero
- 2—Peter Perkins
- 3—George Oliver
- Back—Bob Uihlein

1952—BEVERLY HILLS

- 1—Bob Fletcher
- 2—Tony Veen
- 3—Bob Skene
- Back—Carlton Beal

1953—MEADOW BROOK

- 1—Henry Lewis, III
- 2—Philip Iglehart
- 3—A. L. Corey, Jr.
- Back—G. H. Bostwick

1954—M. BROOK—C. C. C.

- 1—A. D. Beveridge
- 2—Paul Barry
- 3—A. L. Corey, Jr.
- Back—G. H. Bostwick

1955—TRIPLE C

- 1—A. D. Beveridge
- 2—Dr. W. Linfoot
- 3—Paul Barry
- Back—Harold Barry

1956—BRANDYWINE

- 1—Raworth Williams
- 2—Ray Harrington
- 3—Clarence Combs
- Back—William Mayer

SOCCER

Source: Flannery News Bureau of New York.

National Challenge Cup

Emblematic of U. S. Championship

(Senior amateur and professional elevens)

- 1914 Brooklyn (N. Y.) Field Club
 1915-16 Bethlehem (Pa.) Steel Co. F. C.
 1917 Fall River (Mass.) Rovers
 1918-19 Bethlehem (Pa.) Steel Co. F. C.
 1920 Ben Miller F. C., St. Louis, Mo.
 1921 Robins Dry Dock F. C., Brooklyn, N. Y.
 1922 Scullin Steel F. C., St. Louis, Mo.
 1923 Paterson (N. J.) F. C.
 1924 Fall River (Mass.) F. C.
 1925 Shawsheen S. C., Andover, Mass.
 1926 Bethlehem (Pa.) Steel Co. F. C.
 1927 Fall River (Mass.) F. C.
 1928 New York Nationals S. C.
 1929 Hakoah All-Stars, New York
 1930-31 Fall River (Mass.) F. C.
 1932 New Bedford (Mass.) F. C.
 1933-34 Stix, Baer & Fuller F. C., St. Louis, Mo.
 1935 Central Breweries S. C., St. Louis, Mo.
 1936 First German American S. C., Philadelphia
 1937 New York Americans S. C.
 1938 Sparta A. B. A., Chicago, Ill.
 1939 St. Mary's Celtic S. C., New York
 1940 No official champion*
 1941 Pawtucket (R. I.) F. C.
 1942 Gallatin S. C., Pittsburgh
 1943 Brooklyn (N. Y.) Hispano S. C.
 1944 Brooklyn (N. Y.) Hispano S. C.
 1945 Brookhattan S. C., New York
 1946 Vikings, Chicago
 1947 Ponta Delgada F. C., Fall River, Mass.
 1948 Joe Simpkins S. C., St. Louis, Mo.
 1949 Morgan (Pa.) S. C.
 1950 Joe Simpkins S. C., St. Louis, Mo.
 1951 German-Hungarian S. C., New York
 1952 Harmarville (Pa.) S. C.
 1953 Chicago Falcons
 1954 New York Americans
 1955 Eintracht S. C., New York
 1956 Harmarville (Pa.) Hurricanes

* Finalists: Baltimore (Md.) S. C. and Sparta A. B. A., Chicago, Ill.

National Amateur Challenge Cup

- 1923 No official champion*
 1924 Fleisher Yarn F. C., Philadelphia
 1925 Toledo (Ohio) F. C.
 1926 Defenders F. C., New Bedford, Mass.
 1927 Heidelberg (Pa.) F. C.
 1928 No official champion†
 1929 Heidelberg (Pa.) F. C.
 1930 Raffles F. C., Fall River, Mass.
 1931 Goodyear F. C., Akron, Ohio
 1932 Shamrock S. C., Cleveland, Ohio
 1933 German American S. C., Philadelphia
 1934 German American S. C., Philadelphia
 1935 W. W. Riehl S. C., Castle Shannon, Pa.
 1936 First German S. C., Brooklyn, N. Y.
 1937 Highlander F. C., Trenton, N. J.
 1938 Ponta Delgada F. C., Fall River, Mass.
 1939 St. Michael's A. C., Fall River, Mass.
 1940 Morgan-Strasser S. C., Morgan, Pa.
 1941 Fall River (Mass.) S. C.
 1942 Fall River (Mass.) S. C.
 1943 Morgan-Strasser S. C., Morgan, Pa.
 1944 Eintracht S. C., New York
 1945 Eintracht S. C., New York
 1946 Ponta Delgada F. C., Fall River, Mass.
 1947 Ponta Delgada F. C., Fall River, Mass.
 1948 Ponta Delgada F. C., Fall River, Mass.
 1949 Elizabeth (N. J.) Sport Club
 1950 Ponta Delgada F. C., Fall River, Mass.
 1951 German-Hungarian S. C., New York
 1952 St. Louis Raiders
 1953 Ponta Delgada, Fall River, Mass.
 1954 Beadling (Pa.) S. C.
 1955 Heidelberg (Pa.) Tornados
 1956 Kutis, St. Louis

* Medals to semifinals: Fleisher Yarn F. C., Philadelphia; Roxbury (Mass.) F. C.; Jeannette (Pa.) F. C.; Swedish American A. A., Chicago, Ill. † Finalists: Powers-Hudson-Exsex F. C., Fall River, Mass.; and Swedish American A. C., Detroit, Mich.

U. S. BOBSLEDDING RECORDS

Records for the Mt. Van Hoevenberg slide at Lake Placid, N. Y., the only bobsled run in America:

OLYMPIC BOBRUN (5,178 Feet)

(Times in minutes and seconds)

- Two-man (single heat)—Stan Benham-Pat Martin, Sno Birds of Lake Placid (Feb. 16, 1957) 1:12.60
 Two-man (4 heats)—Stan Benham-Pat Martin, Sno Birds of Lake Placid (Feb. 16, 1957) 4:52.83
 Four-man (single heat)—Stan Benham, Pat Martin, Charles Pandolph, John Helmer, Sno Birds of Lake Placid (Feb. 22, 1957) 1:08.88
 Four-man (4 heats)—Stan Benham, Pat Martin, Charles Pandolph, John Helmer, Sno Birds of Lake Placid (Feb. 22, 1957) 4:43.97

HALF-MILE COURSE (2,323 Feet)

- Two-man (single heat)—James Bickford-Hubert Miller, Saranac Lake B. C. (Jan. 9, 1955) 0:39.15
 Two-man (4 heats)—James Bickford-Pat Buckley, Saranac Lake B. C. (Jan. 26, 1946) 2:40.61
 Four-man (single heat)—James Bickford, driver; Pat Buckley; Lucien Miron; William Dupree, brake, Saranac Lake B. C. (Jan. 27, 1946) 0:37.08
 Four-man (4 heats)—James Bickford, driver; Pat Buckley; Lucien Miron; William Dupree, brake, Saranac Lake B. C. (Jan. 27, 1946) 2:29.07

National Baseball Congress Champions

- 1935—Bismarck (N. D.) Corwin-Churchill
 1936—Duncan (Okla.) Halliburtons
 1937—Enid (Okla.) Eason Oilers
 1938—Buford (Ga.) Bona Allens
 1939—Duncan (Okla.) Halliburtons
 1940-41—Enid (Okla.) Champlins
 1942—Wichita (Kans.) Boeing Bombers
 1943—Camp Wheeler (Ga.) Spokes
 1944—Sherman Field (Kans.) Flyers
 1945—Enid (Okla.) Army Air Field
 1946—St. Joseph (Mich.) Autos
 1947-49—Ft. Wayne (Ind.) General Electrics
 1950—Ft. Wayne (Ind.) Capeharts
 1951—Sinton (Texas) Plymouth Oilers
 1952—Fort Myer (Va.) Colonials
 1953—Fort Leonard Wood (Mo.)
 1954-55—Wichita (Kans.) Boeing Bombers
 1956—Ft. Wayne (Ind.) Dairymen

WORLD ALL-TACKLE FISHING RECORDS

Caught with Rod and Reel in Salt Water

Source: International Game Fish Association. H. D. Shaw, Secretary.

Species	Lb., oz.	Length	Girth	Where caught	Year	Angler
Albacore	69	42"	32½"	St. Helena	1956	P. Allen
Amberjack	120—8	62"	40"	Kona, T. H.	1955	C. W. McAlpin
Barracuda	103—4	66"	31¾"	West End, Bahamas	1932	C. E. Benet
Bass, Calif. Black Sea	514	86"	82"	San Clemente, Calif.	1955	J. Patterson
Bass, Calif. White Sea	83—12	65½"	34"	Baja California, Mex.	1953	L. C. Baumgardner
Bass, Channel	83	52"	29"	Cape Charles, Va.	1949	Zack Waters, Jr.
Bass, Sea	8	22"	19"	Nantucket Sound, Mass.	1951	H. R. Rider
Bass, Giant Sea	551	100"	....	Galveston Bay, Texas	1937	G. Pangarakis
Bass, Striped	73	60"	30½"	Vineyard Sound, Mass.	1913	C. B. Church
Blackfish (Tautog)	21—6	31½"	23½"	Cape May, N. J.	1954	R. N. Sheaffer
Bluefish	24—3	41"	22"	San Miguel, Azores	1953	M. da Silva Veloso
Bonito, Oceanic	39—15	39"	28"	Walker Cay, Bahamas	1952	F. Drowley
Cobia	102	70"	34"	Cape Charles, Va.	1938	J. E. Stansbury
Cod	57—8	56"	....	Ambrose Lightship, N. Y.	1949	J. Rzeszewicz
Dolphin	75—8	50"	....	Mafia Channel, E. Africa	1950	A. Conan Doyle
Drum, Black	94—3	51½"	42"	Cape Charles, Va.	1957	James L. Johnson
Flounder, Summer	20	37"	32"	Oak Beach, N. Y.	1948	F. H. Kessel
Flounder, Summer	20—7	37"	29½"	Long Island Sound, N. Y.	1957	Mrs. M. Fredrikson
Kingfish	77	65"	29"	Bimini, Bahamas	1957	C. O. Potts
Marlin, Blue	756	168"	66"	San Juan, P. R.	1956	Allen Sherman, Jr.
Marlin, Pacific Black	1560	174"	81"	Cabo Blanco, Peru	1953	A. C. Glassell, Jr.
Marlin, Silver	755	163¾"	65¾"	Pinas Bay, Panama	1953	R. Dugan, Jr.
Marlin, Striped	692	161"	....	Balboa, California	1931	A. Hamann
Marlin, White	161	104"	33"	Miami, Florida	1938	L. F. Hooper
Pollock	36	46½"	26"	Montauk, N. Y.	1957	Wm. E. Davis
Roosterfish	100	54"	32"	Cabo Blanco, Peru	1954	M. Barrenechea
Sailfish, Atlantic	123	44"	32¾"	Walker Cay, Bahamas	1950	H. Teetor
Sailfish, Pacific	221	129"	....	Santa Cruz Is., Galapagos Is.	1947	C. W. Stewart
Sawfish	736	175"	....	Galveston, Texas	1938	Gus Pangarakis
Shark, Mako	1000	144"	....	Mayor Island, N. Z.	1943	B. D. H. Ross
Shark, Porbeagle	260	48"	68¾"	Durban, S. Africa	1949	J. L. Daniel
Shark, Thresher	922	....	....	Bay of Islands, N. Z.	1937	W. W. Dowding
Shark, Tiger	1382	166"	93"	Sydney Heads, Australia	1939	Lyle Bagnard
Shark, White	2536	201"	111"	Denial Bay, Australia	1955	A. Dean
Snook (Robalo)	50—8	55"	....	Gatun Spillway, Canal Zone	1944	J. W. Anderson
Swordfish	1182	179¾"	78"	Iquique, Chile	1953	L. E. Marron
Tarpon	283	86 3/5"	....	Lake Maracaibo, Venezuela	1956	M. Salazar
Tuna, Alifon (Yellowfin)	265	73"	53"	Makau, T. H.	1937	J. W. Harvey
Tuna, Atlantic Big-Eyed	209—6	70"	46"	Madeira	1956	A. A. Ribeiro
Tuna, Bluefin	977	116"	94½"	St. Ann Bay, Nova Scotia	1950	D. McL. Hodgson
Tuna, Pacific Big Eyed	435	93"	63½"	Cabo Blanco, Peru	1957	R. V. A. Lee
Weakfish	17—8	46"	19"	Mullica River, N. J.	1944	A. Weisbecker, Jr.
Weakfish, Spotted	15—3	34¾"	20½"	Fort Pierce, Fla.	1949	C. W. Hubbard
Yellowtail	105—12½	65"	40"	Bahia de Topolobampo, Mexico	1955	M. A. Yant

Caught with Rod and Reel in Fresh Water

Source: Mary Ball, Field & Stream.

Black Bass, Largemouth	22—4	32½"	28½"	Montgomery Lake, Ga.	1932	George W. Perry
Black Bass, Smallmouth	11—15	27"	21¾"	Dale Hollow Lake, Ky.	1955	David L. Hayes
Bluegill (Sunfish)	4—12	15"	18¾"	Ketona Lake, Ala.	1950	T. S. Hudson
Carp	55—5	42"	31"	Clearwater Lake, Minn.	1952	Frank J. Ledwein
Catfish, Channel	55	50"	27"	James River, S. D.	1949	Roy A. Groves
Muskellunge	69—11	63½"	31¾"	Chippewa Flowage, Wis.	1949	Louis Spray
Perch, White	4—12	19½"	13"	Messalonskee Lake, Maine	1949	Mrs. Earl Small
Perch, Yellow	4—3½	....	....	Bordentown, New Jersey	1865	Dr. C. S. Abbot
Pickereel, Eastern chain	9	30"	15"	Green Pond, N. J.	1948	Russell Kimble
Pike, Northern	46—2	52½"	25"	Sacandaga Reservoir, N. Y.	1940	Peter Dubuc
Salmon, Atlantic	79—2	....	....	Tanaelv, Norway	1928	Henrik Henriksen
Salmon, Chinook	83	....	....	Umpqua River, Oregon	1910	F. R. Steel
Salmon, Landlocked	22—8	36"	....	Sebago Lake, Maine	1907	Edward Blakely
Salmon, Silver	31	....	....	Cowichan Bay, B. C.	1947	Mrs. Lee Hallberg
Sturgeon, White	360	111"	86"	Snake River, Idaho	1956	Willard Cravens
Trout, Brook	14—8	31½"	11½"	Nipigon River, Ontario	1916	Dr. W. J. Cook
Trout, Brown	39—8	....	....	Loch Awe, Scotland	1866	W. Muir
Trout, Dolly Varden	32	40½"	29¾"	Pend Oreille Lake, Idaho	1949	N. L. Higgins
Trout, Lake	63—2	51½"	32¾"	Lake Superior	1952	Hubert Hammers
Trout, Rainbow or Steelhead	37	40½"	28"	Pend Oreille Lake, Idaho	1947	Wes Hamlet
Walleye	22—4	36¾"	21"	Fort Erie, Ontario	1943	Patrick E. Noon

DOG SHOWS

Westminster Kennel Club Exhibition

1907-09	Ch. Warren Remedy	Fox terrier, smooth	Winthrop Rutherford
1910	Ch. Sabine Rarebit	Fox terrier, smooth	Sabine Kennels
1911	Ch. Tickle Em Jock	Scottish terrier	A. Albright, Jr.
1912	Ch. Kenmore Sorceress	Airedale terrier	William P. Wolcott
1913	Ch. Strathway Prince Albert	Bulldog	Alex H. Stewart
1914	Ch. Brentwood Hero	Old English sheep dog	Mrs. Tyler Morse
1915-16	Ch. Matford Vic	Fox terrier, wire	George W. Quintard
1917	Ch. Conejo Wycollar Boy	Fox terrier, wire	Mrs. Roy A. Rainey
1918	Ch. Haymarket Faultless	Bull terrier	R. H. Elliot
1919	Ch. Briergate Bright Beauty	Airedale terrier	G. L. L. Davis
1920	Ch. Conejo Wycollar Boy	Fox terrier, wire	Mrs. Roy A. Rainey
1921	Ch. Midkiff Seductive	Cocker spaniel	William T. Payne
1922	Ch. Boxwood Barkentine	Airedale terrier	Frederic C. Hood
1924	Ch. Barberryhill Bootlegger	Sealyham terrier	Bayard Warren
1925	Ch. Governor Moscow	Pointer	Robert F. Maloney
1926	Ch. Signal Circuit	Fox terrier, wire	Halleston Kennels
1927	Ch. Pinegrade Perfection	Sealyham terrier	Frederic C. Brown
1928	Ch. Talavera Margaret	Fox terrier, wire	R. M. Lewis
1929	Land Loyalty of Bellhaven	Collie	Mrs. Florence B. Ilch
1930-31	Ch. Pendley Calling of Blarney	Fox terrier, wire	John G. Bates
1932	Ch. Nancolleth Markable	Pointer	Giralda Farms
1933	Ch. Warland Protector of Shelterock	Airedale terrier	S. M. Stewart
1934	Ch. Flornell Spicy Bit of Halleston	Fox terrier, wire	Halleston Kennels
1935	Ch. Nunseo Duc de la Terrace of Blakeen	Poodle	Blakeen Kennels
1936	Ch. St. Margaret Magnificent of Clairedale	Sealyham terrier	Clairedale Kennels
1937	Ch. Flornell Spicy Piece of Halleston	Fox terrier, wire	Halleston Kennels
1938	Daro of Maridor	English setter	Maridor Kennels
1939	Ferry v. Raufhelsen of Giralda	Doberman pinscher	Giralda Farms
1940-41	Ch. My Own Brucie	Cocker spaniel	H. E. Mellenthin
1942	Ch. Wolvey Pattern Edgerstoune	West Highland terrier	Mrs. John G. Winant
1943	Ch. Pitter Patter of Piperscroft	Miniature poodle	Mrs. P. H. B. Frelinghuysen
1944	Ch. Flornell Rare-Bit of Twin Ponds	Welsh terrier	Mrs. Edward P. Alker
1945	Shieling's Signature	Scottish terrier	Mr. and Mrs. T. H. Snethen
1946	Ch. Hetherington Model Rhythm	Fox terrier, wire	Mr. and Mrs. T. H. Carruthers III
1947	Ch. Warlord of Mazelaine	Boxer	Mr. and Mrs. R. C. Kettles, Jr.
1948	Ch. Rock Ridge Night Rocket	Bedlington terrier	Mr. and Mrs. W. A. Rockefeller
1949	Ch. Mazelaine's Zazarac Brandy	Boxer	Mr. and Mrs. John P. Wagner
1950	Ch. Walsing Winning Trick of Edgerstoune	Scottish terrier	Mrs. John G. Winant
1951	Ch. Bang Away of Sirrah Crest	Boxer	Dr. and Mrs. R. C. Harris
1952	Ch. Rancho Dobe's Storm	Doberman pinscher	Mr. and Mrs. Len Carey
1953	Ch. Topflight Template of Twin Ponds	Welsh terrier	Mrs. Edward P. Alker
1954	Ch. Carmor's Rise and Shine	Cocker Spaniel	Mrs. Carl E. Morgan
1955	Ch. Kippax Fearnought	Bulldog	Dr. John A. Saylor
1956	Ch. Wilber White Swan	Toy poodle	Bertha Smith

Morris and Essex Kennel Club Exhibition

Year	Best in show	Breed	Owner
1927	Ch. Higgins' Red Pat	Irish setter	William W. Higgins
1928	Ch. Delf Discriminate of Pinegrade	Sealyham terrier	Pinegrade Kennels
1929	Ch. Little Emir	Pomeranian	Mrs. V. Matta
1930	Ch. Weltona Frizzette of Wildoaks	Fox terrier, wire	Mr. and Mrs. R. C. Bondy
1931	Ch. Fionne v. Loheland of Walnut Hall	Great dane	Harkness Edwards
1932	Ch. Lone Eagle of Earlsmoor	Fox terrier, wire	Dr. and Mrs. S. Milbank
1933	Epingleville of Blarney	Fox terrier, wire	John G. Bates
1934	Ch. Gunside Babs of Hollybourne	Sealyham terrier	S. L. Froelich
1935	Ch. Milson O'Boy	Irish setter	Mrs. Cheever Porter
1936	Ch. Mr. Reynal's Monarch	Harrier	Amory L. Haskell
1937	Ch. Sturdy Max	English setter	Maridor Kennels
1938	Ch. Ideal Weather	Old English sheep dog	Leonard Collins
1939	Ch. My Own Brucie	Cocker spaniel	H. E. Mellenthin
1940	Ch. Blakeen Jung Frau	Poodle, standard	Blakeen Kennels
1941	Ch. Nornay Saddle	Fox terrier, smooth	Wissaboo Kennels
1946	Ch. Benbow's Beau	Cocker spaniel	Robert A. Gusman
1947-48	Rock Ridge Night Rocket	Bedlington terrier	Mr. and Mrs. W. A. Rockefeller
1949	Ch. Walsing Winning Trick of Edgerstoune	Scottish terrier	Mrs. John G. Winant
1950	Ch. Tyrone Farm Clancy	Irish setter	Jack Spear
1951	Ch. Rock Falls Colonel	English setter	William T. Holt
1952	Ch. Wyretex Wyns Traveller of Trucote	Fox terrier, wire	Mrs. Leonard Smith
1953	Ch. Rancho Dobe's Storm	Doberman pinscher	Mr. and Mrs. Len Carey
1955	Ch. Baroque of Quality Hill	Boxer	Mr. and Mrs. John P. Wagner
1956	Ch. Roadcoach Roadster	Dalmatian	Mrs. Sydney K. Allman, Jr.

HORSE RACING

ANCIENT DRAWINGS on stone and bone prove that horse racing is at least 3000 years old, but Thoroughbred Racing is a modern development. Practically every thoroughbred in training today traces its registered ancestry back to one or more of three sires that arrived in England about 1728 from the Near East and became known, from the names of their owners, as the Byerly Turk, the Darley Arabian and the Godolphin Arabian. The Jockey Club (English) was founded at Newmarket in 1750 or 1751 and became the custodian of the Stud Book as well as the court of last resort in deciding turf affairs.

There was horse racing in this country before the Revolution, but the great lift to the breeding industry came with the importation in 1798, by Col. John Hoomes of Virginia, of Diomed, winner of the Epsom Derby of 1780. Diomed's lineal descendants included such famous stars of the American turf as American Eclipse and Lexington. From 1800 to the time of the Civil War there were race courses and breeding establishments plentifully scattered through Virginia, North Carolina, South Carolina, Tennessee, Kentucky and

Louisiana. In fact, thoroughbred racing was largely a Southern sport and that was one reason why the Confederacy had such excellent cavalry in the Civil War. A century ago crack horses were matched in four-mile races that were run in heats, best two out of three!

The oldest stake event in North America is the Queen's Plate, a Canadian fixture that was first run in the Province of Quebec in 1836. The oldest stake event in the United States is The Travers, which was first run at Saratoga in 1864. The gambling that goes with horse racing and trickery by jockeys, trainers, owners and track officials caused attacks on the sport by reformers and a demand among horse racing enthusiasts for an honest and effective control of some kind, but nothing of lasting value to racing came of this until the formation of The Jockey Club in 1894. The Jockey Club, composed of about sixty members chosen from the aristocracy of the turf, was all-powerful in racing regulation until the State Racing Commissions came into being as a result of mutual betting and the great revenues that came with the tax on the "daily handle."

Horse Racing Statistics

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HISTORY OF TRADITIONAL STAKES

AMERICAN DERBY

Washington Park; 3-year-olds; 1½ miles.

Run at old Washington Park, Chicago, through 1904; run at Hawthorne in 1916; run at Arlington Park in 1928. Distance 1½ miles until 1928; 1¼ miles until 1952.

Year	Winner	Jockey	Wt.	Win val.	Year	Winner	Jockey	Wt.	Win val.
1884	Modesty.....	I. Murphy.....	117	\$10,700	1931	Mate.....	G. Ellis.....	126	\$48,670
1885	Volante.....	I. Murphy.....	123	9,570	1932	Gusto.....	S. Coucci.....	118	48,205
1886	Silver Cloud.....	I. Murphy.....	121	8,160	1933	Mr. Khayyam.....	P. Walls.....	121	23,410
1887	C. H. Todd.....	Hamilton.....	118	13,690	1934	Cavalcade.....	M. Garner.....	126	23,315
1888	Emperor of Norfolk	I. Murphy.....	123	14,340	1935	Black Helen.....	D. Meade.....	118	25,020
1889	Spokane.....	T. Kiley.....	121	15,400	1937	Dawn Play.....	L. Balaski.....	116	25,400
1890	Uncle Bob.....	T. Kiley.....	115½	15,260	1940	Mioland.....	J. Adams.....	123	44,900
1891	Strathmeath.....	Covington.....	112	18,610	1941	Whirlaway.....	A. Robertson.....	126	44,970
1892	Carlsbad.....	R. Williams.....	122	16,930	1942	Alsab.....	G. Woolf.....	126	60,855
1893	Boundless.....	E. Garrison.....	122	49,500	1943	Askmenow.....	G. Woolf.....	115	56,150
1894	Rey el S'ta A'ta.....	E. Van Kuren.....	122	19,750	1944	By Jimminy.....	G. Woolf.....	122	61,650
1898	Pink Goat.....	W. Martin.....	127	9,225	1945	Fighting Step.....	G. South.....	118	68,950
1900	Sidney Lucas.....	J. Bullman.....	122	9,425	1946	Eternal Reward.....	R. Campbell.....	118	83,455
1901	Robert Waddell.....	J. Bullman.....	119	19,275	1947	Fervent.....	D. Dodson.....	118	70,950
1902	Wyeth.....	L. Lyne.....	122	19,875	1948	Citation.....	E. Arcaro.....	126	66,450
1903	The Picket.....	Helgeson.....	115	27,025	1949	Ponder.....	S. Brooks.....	126	66,150
1904	Highball.....	G. C. Fuller.....	122	26,325	1950	Hill Prince.....	E. Arcaro.....	126	60,050
1916	Dodge.....	F. Murphy.....	126	6,850	1951	Hall of Fame.....	T. Atkinson.....	122	61,200
1926	Boot to Boot.....	A. Johnson.....	121	89,000	1952	Mark-Ye-Well.....	E. Arcaro.....	120	103,325
1927	Hydromel.....	L. McDermott.....	116	22,750	1953	Native Dancer.....	E. Arcaro.....	128	66,500
1928	Toro.....	E. Ambrose.....	126	21,920	1954	Errard King.....	S. Boulmetis.....	124	68,900
1929	Windy City.....	L. McDermott.....	118	47,550	1955	Swaps.....	W. Shoemaker.....	126	89,600
1930	Reveille Boy.....	W. Fronk.....	118	51,200	1956	Swoon's Son.....	E. Arcaro.....	122	102,600

ARLINGTON CLASSIC

Arlington Park; 3-year-olds; 1 mile.

1929	Blue Larkspur.....	M. Garner.....	126	\$59,900	1943	Slide Rule.....	F. Zufelt.....	120	\$53,450
1930	Gallant Fox.....	E. Sande.....	126	64,750	1944	Twilight Tear.....	L. Haas.....	114	62,050
1931	Mate.....	A. Robertson.....	126	73,650	1945	Pot o' Luck.....	D. Dodson.....	119	67,150
1932	Gusto.....	S. Coucci.....	126	76,600	1946	The Dude.....	M. Duhon.....	119	76,850
1933	Inlander.....	R. Jones.....	118	32,755	1947	But Why Not.....	W. Mehrtens.....	117	71,500
1934	Cavalcade.....	M. Garner.....	126	30,325	1948	Papa Redbird.....	R. L. Baird.....	122	66,600
1935	Omaha.....	W. D. Wright.....	126	28,975	1949	Ponder.....	S. Brooks.....	126	65,450
1936	Granville.....	J. Stout.....	126	28,400	1950	Greek Song.....	O. Scurlock.....	120	58,950
1937	Flying Scot.....	J. Gilbert.....	123	27,375	1951	Hall of Fame.....	T. Atkinson.....	120	62,975
1938	Nedayr.....	W. D. Wright.....	121	27,500	1952	Mark-Ye-Well.....	E. Arcaro.....	112	105,375
1939	Challedon.....	H. Richards.....	126	35,600	1953	Native Dancer.....	E. Guerin.....	126	97,725
1940	Sirocco.....	G. Woolf.....	121	37,935	1954	Errard King.....	S. Boulmetis.....	120	104,475
1941	Attention.....	C. Bierman.....	121	42,450	1955	Nashua.....	E. Arcaro.....	126	91,675
1942	Shut Out.....	E. Arcaro.....	126	69,700	1956	Swoon's Son.....	D. Erb.....	120	102,000

ARLINGTON FUTURITY

Arlington Park; 2-year-olds; 3/4 mile.

1927	Misstep.....	E. Pool.....	122	\$ 9,360	1944	Free for All.....	O. Grohs.....	122	\$48,525
1928	Double Heart.....	L. Gaving.....	115	21,920	1945	Spy Song.....	S. Brooks.....	122	58,650
1932	Ladysman.....	R. Jones.....	117	38,010	1946	Cosmic Bomb.....	S. Clark.....	122	66,875
1933	Far Star.....	D. Bellizzi.....	116	31,020	1947	Piet.....	Dell Jessop.....	122	66,900
1934	Toro Nancy.....	R. Jones.....	112	41,725	1948	Mr. Busher.....	F. Zufelt.....	122	62,725
1935	Grand Slam.....	J. Bryson.....	122	45,135	1949	Wisconsin Boy.....	J. Chestnut.....	122	60,075
1936	Case Ace.....	A. Robertson.....	117	36,540	1950	To Market.....	A. Rivera.....	122	56,215
1937*	Tiger.....	A. Robertson.....	122	.....	1951	Hill Gail.....	S. Brooks.....	122	64,140
	Teddy's Comet.....	G. Smith.....	117	18,000	1952	Mr. Good.....	D. Dodson.....	122	81,575
1938	Thingumabob.....	E. Arcaro.....	117	31,110	1953	Hasty Road.....	E. Arcaro.....	122	101,475
1939	Andy K.....	J. E. Oros.....	114	33,735	1954	Royal Note.....	E. Arcaro.....	122	93,345
1940	Swain.....	J. Adams.....	117	34,470	1955	Swoon's Son.....	D. Erb.....	122	88,140
1941	Sun Again.....	W. Eads.....	122	34,655	1956	Greek Game.....	W. Hartack.....	122	84,410
1942	Occupation.....	L. Balaski.....	117	51,500					
1943	Jezrahel.....	O. Grohs.....	116	48,650					

* Dead heat.

BELMONT FUTURITY

Belmont Park; 2-year-olds; 6 1/2 furlongs.

1888	Proctor Knott.....	S. Barnes.....	112	\$40,900	1924	Mother Goose.....	L. McAtee.....	114	\$65,730
1889	Chaos.....	G. Day.....	109	54,500	1925	Pompey.....	L. Fator.....	127	58,480
1890	Potomac.....	A. Hamilton.....	115	67,675	1926	Scapa Flow.....	L. Fator.....	122	65,980
1891	His Highness.....	J. McLaughlin.....	130	61,675	1927	Anita Peabody.....	C. Lang.....	124	91,790
1892	Morello.....	W. Hayward.....	118	40,450	1928	High Strung.....	L. McAtee.....	122	97,990
1893	Domino.....	F. Taral.....	130	48,855	1929	Whichone.....	R. Workman.....	125	105,730
1894	The Butterflies.....	H. Griffin.....	112	48,710	1930	Jamestown.....	L. McAtee.....	130	99,600
1895	Requital.....	H. Griffin.....	115	53,190	1931	Top Flight.....	R. Workman.....	127	94,780
1896	Ogden.....	F. Turbiville.....	115	43,790	1932	Kerry Patch.....	P. Walls.....	122	88,690
1897	L'Alouette.....	R. Clawson.....	115	34,290	1933	Singing Wood.....	R. Jones.....	122	81,700
1898	Martimas.....	H. Lewis.....	118	36,610	1934	Chance Sun.....	W. D. Wright.....	122	77,510
1899	Chacornac.....	H. Spencer.....	114	30,630	1935	Tintagel.....	S. Coucci.....	122	66,450
1900	Ballyhoo Bey.....	T. Sloan.....	112	33,580	1936	Pompoon.....	H. Richards.....	127	55,630
1901	Yankee.....	W. O'Connor.....	119	36,850	1937	Menow.....	C. Kurltsinger.....	119	56,800
1902	Savable.....	L. Lyne.....	119	44,500	1938	Porter's Mite.....	B. James.....	119	57,045
1903	Hamburg Belle.....	G. Fuller.....	114	36,600	1939	Bimelech.....	F. A. Smith.....	126	57,710
1904	Artful.....	E. Hildebrand.....	114	40,830	1940	Our Boots.....	E. Arcaro.....	119	65,800
1905	Ormondale.....	A. Redfern.....	117	32,960	1941	Some Chance.....	W. Eads.....	122	57,900
1906	Electioneer.....	W. Shaw.....	117	36,880	1942	Occupation.....	G. Woolf.....	126	57,890
1907	Colin.....	W. Miller.....	125	26,640	1943	Occupy.....	G. Woolf.....	126	55,635
1908	Maskette.....	J. Notter.....	118	26,110	1944	Pavot.....	G. Woolf.....	126	53,890
1909	Sweep.....	J. Butwell.....	126	24,100	1945	Star Pilot.....	A. Kirkland.....	126	52,940
1910	Novelty.....	C. H. Shilling.....	127	25,360	1946	First Flight.....	E. Arcaro.....	123	73,350
1913	Pennant.....	C. Borel.....	119	15,060	1947	Citation.....	A. Snider.....	122	78,430
1914	Trojan.....	C. Burlingame.....	117	16,010	1948	Blue Peter.....	E. Guerin.....	126	88,410
1915	Thunderer.....	J. Notter.....	122	16,590	1949	Guillotine.....	T. Atkinson.....	122	87,585
1916	Campfire.....	J. McTaggart.....	125	17,340	1950	Battlefield.....	E. Arcaro.....	122	81,715
1917	Papp.....	L. Allen.....	127	15,600	1951	Tom Fool.....	T. Atkinson.....	122	86,710
1918	Dunboyne.....	A. Schuttinger.....	127	23,360	1952	Native Dancer.....	E. Guerin.....	122	82,845
1919	Man o' War.....	J. Loftus.....	127	26,650	1953	Porterhouse.....	W. Boland.....	122	92,875
1920	Step Lightly.....	F. Keogh.....	116	35,870	1954	Nashua.....	E. Arcaro.....	122	88,015
1921	Bunting.....	F. Coliletti.....	117	39,700	1955	Nail.....	H. Woodhouse.....	122	100,425
1922	Sally's Alley.....	A. Johnson.....	116	47,550	1956	Bold Ruler.....	E. Arcaro.....	122	91,145
1923	St. James.....	T. McTaggart.....	130	64,810					

BELMONT STAKES

Belmont Park; 3-year-olds; 1½ miles.

Run at Jerome Park prior to 1890; run at Morris Park from 1890 to 1905. Distance 1½ miles prior to 1874; reduced to 1¼ miles, 1874; reduced to 1¼ miles, 1890; changed to 1¼ miles, 1893; increased to 1¼ miles, 1895; increased to 1½ miles, 1896; changed to 1½ miles in 1904 and 1905; increased to 1½ miles, 1926.

Year	Winner	Jockey	Wt.	Win val.	1913	Prince Eugene	R. Troxler	109	\$2,825
1867	Ruthless	J. Gilpatrick	107	\$ 1,850	1914	Luke McLuke	M. Buxton	126	3,025
1868	General Duke	R. Swim	110	2,800	1915	The Finn	G. Byrne	126	1,825
1869	Fenian	C. Miller	110	3,350	1916	Friar Rock	E. Haynes	126	4,100
1870	Kingfisher	W. Dick	110	3,750	1917	Hourless	J. Butwell	126	5,800
1871	Harry Bassett	W. Miller	110	5,450	1918	Johren	F. Robinson	126	8,950
1872	Joe Daniels	J. Rowe	110	4,500	1919	Sir Barton	J. Loftus	126	11,950
1873	Springbok	J. Rowe	110	5,200	1920	Man o' War	C. Kummer	126	7,950
1874	Saxon	G. Bardee	110	4,200	1921	Grey Lag	E. Sande	126	8,650
1875	Calvin	R. Swim	110	4,450	1922	Pillory	C. H. Miller	126	39,200
1876	Algerine	W. Donohue	110	3,700	1923	Zev	E. Sande	126	38,000
1877	Cloverbrook	C. Holloway	110	5,200	1924	Mad Play	E. Sande	126	42,880
1878	Duke of Magenta	L. Hughes	118	3,850	1925	American Flag	A. Johnson	126	38,500
1879	Spendthrift	S. Evans	118	4,250	1926	Crusader	A. Johnson	126	48,550
1880	Grenada	L. Hughes	118	2,800	1927	Chance Shot	E. Sande	126	60,910
1881	Saunterer	T. Costello	118	3,000	1928	Vito	C. Kummer	126	63,430
1882	Forester	J. McLaughlin	118	2,600	1929	Blue Larkspur	M. Garner	126	59,650
1883	George Kinney	J. McLaughlin	118	3,070	1930	Gallant Fox	E. Sande	126	66,040
1884	Panique	J. McLaughlin	118	3,150	1931	Twenty Grand	C. Kurtzinger	126	58,770
1885	Tyrant	P. Duffy	118	2,710	1932	Faireno	T. Malley	126	55,120
1886	Inspector B.	J. McLaughlin	118	2,720	1933	Hurryhoff	M. Garner	126	49,490
1887	Hanover	J. McLaughlin	118	2,900	1934	Peace Chance	W. D. Wright	126	43,410
1888	Sir Dixon	J. McLaughlin	118	3,440	1935	Omaha	W. Saunders	126	35,480
1889	Eric	W. Hayward	118	4,960	1936	Granville	J. Stout	126	29,800
1890	Burlington	S. Barnes	118	8,560	1937	War Admiral	C. Kurtzinger	126	38,020
1891	Foxford	E. Garrison	118½	5,070	1938	Pasteurized	J. Stout	126	34,530
1892	Patron	W. Hayward	122	6,610	1939	Johnstown	J. Stout	126	37,020
1893	Comanche	W. Simms	117	5,310	1940	Bimelech	F. A. Smith	126	35,030
1894	Henry of Navarre	W. Simms	117	6,680	1941	Whirlaway	E. Arcaro	126	39,770
1895	Belmar	F. Taral	119	2,700	1942	Shut Out	E. Arcaro	126	44,520
1896	Hastings	H. Griffin	122	3,025	1943	Count Fleet	J. Longden	126	35,340
1897	Scottish Chieftain	J. Scherrer	115	3,550	1944	Bounding Home	G. L. Smith	126	55,000
1898	Bowling Brook	F. Littlefield	122	7,810	1945	Pavot	E. Arcaro	126	52,675
1899	Jean Bereaud	R. Clawson	122	9,445	1946	Assault	W. Mehrrens	126	75,400
1900	Ildrim	N. Turner	126	14,790	1947	Phalanx	R. Donoso	126	78,900
1901	Commando	H. Spencer	126	11,595	1948	Citation	E. Arcaro	126	77,700
1902	Masterman	J. Bullman	126	13,220	1949	Capot	T. Atkinson	126	60,900
1903	Africander	J. Bullman	126	12,285	1950	Middleground	W. Boland	126	61,350
1904	Delhi	G. Odum	126	11,575	1951	Counterpoint	D. Gorman	126	82,000
1905	Tanya	E. Hildebrand	121	17,240	1952	One Count	E. Arcaro	126	82,400
1906	Burgomaster	L. Lyne	126	22,700	1953	Native Dancer	E. Guerin	126	82,500
1907	Peter Pan	G. Mountain	126	22,765	1954	High Gun	E. Guerin	126	89,000
1908	Colin	J. Notter	126	22,765	1955	Nashua	E. Arcaro	126	83,700
1909	Joe Madden	E. Dugan	126	24,550	1956	Needles	D. Erb	126	83,600
1910	Sweep	J. Butwell	126	9,700					

EPSOM DERBY

Epsom Downs, England; 3-year-olds; 1 mile, 885 yards.

Distance one mile prior to 1784. Distance 1¼ miles since 1939. Run at Newmarket from 1915 to 1918, inclusive and from 1940 to 1945, inclusive, and called the New Derby Stakes.

Year	Winner	Owner	Win val.	Year	Winner	Owner	Win val.
1780	Diomed	Sir C. Bunbury	\$ 5,620	1798	Sir Harry	Mr. Cookson	\$5,375
1781	Y. Eclipse	Mr. O'Kelly	6,255	1799	Archduke	Sir F. Standish	5,000
1782	Assassin	Lord Egremont	5,500	1800	Champion	Mr. Wilson	5,250
1783	Saltram	Mr. Parker	5,000	1801	Eleanor	Sir C. Bunbury	4,375
1784	Sergeant	Mr. O'Kelly	5,125	1802	Tyrant	Duke of Grafton	4,750
1785	Aimwell	Lord Clermont	4,375	1803	Ditto	Sir H. Williamson	4,625
1786	Noble	Mr. Panton	5,000	1804	Hannibal	Lord Egremont	4,625
1787	Sir P. Teazle	Lord Derby	4,500	1805	Card. Beaufort	Lord Egremont	6,250
1788	Sir Thomas	Prince of Wales	4,625	1806	Paris	Lord Foley	5,875
1789	Skyscraper	Duke of Bedford	4,652	1807	Election	Lord Egremont	5,875
1790	Rhadamanthus	Lord Grosvenor	4,750	1808	Pan	Sir H. Williamson	5,500
1791	Eager	Duke of Bedford	4,625	1809	Pope	Duke of Grafton	6,375
1792	John Bull	Lord Grosvenor	4,875	1810	Whalebone	Duke of Grafton	6,500
1793	Waxy	Sir F. Poole	6,500	1811	Phantom	Sir J. Shelley	7,500
1794	Daedalus	Lord Grosvenor	6,125	1812	Octavius	Mr. Ladbroke	7,125
1795	Spread Eagle	Sir F. Standish	6,500	1813	Smolensko	Sir C. Bunbury	7,375
1796	Didelot	Sir F. Standish	6,500	1814	Blucher	Lord Stawell	7,125
1797	Colt by Fidget	Duke of Bedford	5,000	1815	Whisker	Duke of Grafton	7,500

Epsom Derby (Cont.)

Year	Winner	Owner	Win Val.	1886	Ormonde	D. of Westminster	\$23,500
1816	Prince Leopold	Duke of York	\$7,250	1887	Mer. Hampton	Mr. Abington	22,625
1817	Azor	Mr. Payne	8,625	1888	Ayrshire	Duke of Portland	18,375
1818	Sam	Mr. Thornhill	8,500	1889	Donovan	Duke of Portland	20,250
1819	Tiresias	Duke of Portland	8,250	1890	Sanfoin	Sir J. Miller	29,700
1820	Sailor	Mr. Thornhill	7,875	1891	Common	Sir F. Johnstone	27,550
1821	Gustavus	Mr. Hunter	7,875	1892	Sir Hugo	Lord Bradford	34,900
1822	Moses	Duke of York	7,625	1893	Isinglass	Mr. McCalmont	27,575
1823	Emilius	Mr. Udny	8,375	1894	Ladas	Lord Rosebery	27,250
1824	Cedric	Sir J. Shelley	8,875	1895	Sir Visto	Lord Rosebery	27,250
1825	Middleton	Lord Jersey	9,000	1896	Persimmon	Prince of Wales	27,250
1826	Lap Dog	Lord Egremont	9,000	1897	Galtee More	Mr. Gubbins	27,250
1827	Mameluke	Lord Jersey	13,500	1898	Jeddah	J. Larnach	27,250
1828	Cadland	Duke of Rutland	13,000	1899	Flying Fox	D. of Westminster	27,250
1829	Frederick	Mr. Gratwicke	12,750	1900	Diamond Jubilee	Prince of Wales	27,250
1830	Priam	Mr. Chifney	13,500	1901	Volodyovskii	W. C. Whitney	28,350
1831	Spaniel	Lord Lowther	15,500	1902	Ard Patrick	J. Gubbins	27,250
1832	St. Giles	Mr. Ridsdale	14,375	1903	Rock Sand	Sir J. Miller	32,500
1833	Dangerous	Mr. Saddler	17,625	1904	St. Amant	L. de Rothschild	32,250
1834	Plenipotentiary	Mr. Batson	17,125	1905	Cicero	Lord Rosebery	32,250
1835	Mundig	Mr. Bowes	16,750	1906	Spearmint	Maj. E. Loder	32,250
1836	Bay Middleton	Lord Jersey	18,125	1907	Orby	R. Croker	32,250
1837	Phosphorus	Lord Berner	14,000	1908	Signorinetta	Chev. Gnistrelli	32,250
1838	Amato	Sir G. Heatcote	18,265	1909	Minoru	King Edward	32,250
1839	Bloomsbury	Mr. W. Ridsdale	19,500	1910	Lemberg	Mr. Fairie	32,250
1840	Little Wonder	Mr. Robertson	19,125	1911	Sunstar	J. B. Joel	32,250
1841	Coronation	Mr. Rawlinson	21,875	1912	Tagalie	W. Raphael	32,250
1942	Attila	Colonel Anson	24,500	1913	Abeyeur	A. P. Cunliffe	32,250
1843	Cotherstone	Mr. Bowes	21,250	1914	Durbar II†	H. B. Duryea	32,250
1844	Orlando	Colonel Peel	21,750	1915	Pommern	S. Joel	12,000
1845	Merry Monarch	Mr. Gratwick	20,000	1916	Fitinella	E. Hulton	14,500
1846	Pyrrhus the First	Mr. Gully	26,500	1917	Gay Crusader	Mr. Fairie	10,250
1847	Cossack	Mr. Pedley	26,500	1918	Gainsborough	Lady Jas. Douglas	20,000
1848	Surplice	Lord Clifton	28,000	1919	Grand Parade	Lord Glanely	32,250
1849	T. Flying Dutchman	Lord Eglington	31,875	1920	Spion Kop	Maj. G. Loder	32,250
1850	Voltigeur	Lord Zetland	29,375	1921	Humorist	J. B. Joel	32,250
1851	Teddington	Sir J. Hawley	26,875	1922	Captain Cuttle	Lord Woolavington	51,250
1852	Dan. O'Rourke	Mr. Bowes	24,350	1923	Papyrus	Ben Irish	56,800
1853	W. Australian	Mr. Bowes	26,500	1924	Sansovino	Lord Derby	59,025
1854	Andover	Mr. Gully	29,250	1925	Manna	H. E. Morris	55,475
1855	Wild Dayrell	F. Popham	24,125	1926	Coronach	Lord Woolavington	51,750
1856	Ellinton	Admiral Harcourt	28,125	1927	Call Boy	Frank Curzon	63,075
1857	Blink Bonny	W. l'Anson	27,750	1928	Felstead	Sir H. C'cliffe-Owen	58,025
1858	Beadsman	Sir J. Hawley	26,615	1929	Trigo	W. Barnett	59,825
1859	Musjid	Sir J. Hawley	33,250	1930	Blenheim	H. H. Aga Khan	50,180
1860	Thormanby	Mr. Merry	30,500	1931	Cameronian	J. A. Dewar	48,640
1861	Kettledrum	Colonel Towneley	30,500	1932	April the Fifth	T. Walls	34,056
1862	Caractacus	Mr. Snewing	32,125	1933	Hyperion	Lord Derby	49,182
1863	Macaroni	R. C. Naylor	34,500	1934	Windsor Lad	H. H. M. of Raj'pla	46,760
1864	Blair Athol	W. l'Anson	32,500	1935	Bahram	H. H. Aga Khan	46,080
1865	Gladiateur	C'nt F. deLagrange	34,375	1936	Mahmoud	H. H. Aga Khan	49,670
1866	Lord Lyon	R. Sutton	37,750	1937	Mid-Day Sun	Mrs. G. B. Miller	47,205
1867	Hermit	Mr. Chaplin	35,000	1938	Bois Roussel	P. Beatty	43,644
1868	Blue Gown	Sir J. Hawley	34,000	1939	Blue Peter	Lord Rosebery	42,680
1869	Pretender	J. Johnstone	31,125	1940	Pont l'Eveque	F. Darling	23,803
1870	Kingcraft	Lord Falmouth	38,875	1941	Owen Tudor	Mrs. M'D'aid-Buc'n	18,003
1871	Favonius	B. Rothschild	25,625	1942	Watling Street	Lord Derby	15,530
1872	Cremorne	H. Savile	24,250	1943	Straight Lead	Miss Dorothy Paget	17,552
1873	Doncaster	Mr. Merry	24,125	1944	Ocean Swell	Lord Rosebery	23,604
1874	Geo. Frederick	W. S. Cartwright	26,750	1945	Dante	Sir Eric Ohlson	33,356
1875	Calopin	Prince Bathany	24,750	1946	Airborne	J. E. Ferguson	38,662
1876	Kisber	A. Baltazzi	27,875	1947	Pearl Diver	B. G. de Waldner	38,788
1877	Silbio	Lord Falmouth	30,250	1948	My Love	Aga Khan-Volterra	49,936
1878	Sefton	W. S. Crawford	29,125	1949	Nimbus	Mrs. M. Glenister	56,980
1879	Sir Bevvys	Mr. Acton	35,125	1950	Galcador	Marcel Bouscass	51,030
1880	Bend Or	D. of Westminster	31,875	1951	Arctic Prince	Joseph McGrath	54,264
1881	Iroquoist	P. Lorillard	29,625	1952	Tulyar	H. H. Aga Khan	57,353
1882	Shotover	D. of Westminster	23,875	1953	Pinza	Sir Victor Sassoon	53,530
1883	St. Blaise	Sir F. Johnstone	25,750	1954	Never Say Die†	Robert S. Clark	47,485
1884*	St. Gaffin	J. Hammond		1955	Phil Drake	Mme. Suzy Volterra	52,365
	Harvester	Sir J. Willoughby	24,500	1956	Lavadin	Pierre Wertheimer	58,839
1885	Melton	Lord Hastings	22,625				

* Dead heat; stake divided. † American bred or owned.

GRAND NATIONAL STEEPLECHASE

Liverpool, England; 6-year-olds and over; 4 miles, 856 yards (Aintree Course)

Year	Winner	Owner	Starters	Value	Year	Winner	Owner	Starters	Value
1839	Lottery	J. Elmore	17		1897	Manifesto	H. M. Dyas	28	\$ 9,875
1840	Jerry	Mr. Villebois	12		1898	Drogheda	C. G. Adams	25	9,875
1841	Charity	Lord Craven	11		1899	Manifesto	J. G. Bulteel	19	9,875
1842	Gaylad	J. Elmore	15		1900	Ambush II	Prince of Wales	16	9,875
1843	Vanguard	Lord Chesterfield	16		1901	Grudon	B. Bletsoe	24	9,875
1844	Pioneer	Mr. Quartermaine	22		1902	Shannon Lass	A. Gorham	21	10,000
1845	Cure All	W. S. Crawford	15		1903	Drumcree	J. S. Morrison	23	10,000
1846	Pioneer	Mr. Adams	22		1904	Moifaa	G. H. Gollan	26	10,000
1847	Matthew	Mr. Courtenay	26		1905	Kirkland	F. Bibby	27	10,125
1848	Chandler	Capt. Little	30		1906	Asceltic's Silver	Prince Hatzfeldt	23	10,875
1849	Peter Simple	Mr. S. Mason, Jr.	24	\$4,025	1907	Eremon	S. Howard	23	12,000
1850	Abd el Kader	Mr. Osborne	32		1908	Rubio†	Maj. F. Douglas-Pennant	24	12,000
1851	Abd el Kader	Mr. Osborne	21		1909	Lutteur III	J. Hennessy	32	12,000
1852	Miss Mowbray	T. F. Mason	24	3,400	1910	Jenkinstown	S. Howard	25	12,000
1853	Peter Simple	Capt. Little	21		1911	Glenside	F. Bibby	26	12,500
1854	Bourton	Mr. Moseley			1912	Jerry M.	Mr. C. G. Assheton-Smith	24	16,000
1855	Wanderer	Mr. Dennis	20		1913	Covertcoat	Sir C. G. Assheton-Smith	22	15,850
1856	Freetrader	W. Barnett	21		1914	Sunloch	T. Tyler	20	17,575
1857	Emigrant	G. Hodgman	28	5,575	1915	Ally Sloper	Lady Nelson	20	17,575
1858	Little Charley	C. Capel	16		1916*	Bermouth	P. F. Heybourn	21	5,750
1859	Half Caste	Mr. Willoughby	20	4,200	1917*	Ballymacad	Sir G. Bullough	19	6,025
1860	Anatis	C. Capel	19		1918*	Poethlyn	Mrs. H. Peel	17	4,925
1861	Jealousy	J. Bennett	24	4,925	1919*	Poethlyn	Mrs. H. Peel	22	17,950
1862	Huntsman	Visc't de Namur	13		1920	Troytown	Major Gerrard	24	21,800
1863	Emblem	Lord Coventry	16	4,275	1921	Shaun Spadah	T. McAlpine	35	39,925
1864	Emblematic	Lord Coventry	25		1922	Music Hall	Hugh Kershaw	32	35,000
1865	Alcibiade	B. J. Angell	23	5,175	1923	Sgt. Murphy†	Stephen Sanford	28	36,100
1866	Salamander	Mr. Studd	30		1924	Master Rob't.	Lord Airlie	30	40,825
1867	Cortolvin	Duke of Hamilton	23	8,300	1925	Double Chance	Major D. Goid	33	40,600
1868	The Lamb	Lord Poulett	21	7,850	1926	Jack Horner	C. Schwartz	30	31,550
1869	The Colonel	Mr. Weyman	22	8,800	1927	Sprig	Mrs. M. Partridge	37	41,075
1870	The Colonel	M. Evans	23	7,325	1928	Tipperary Tim	H. S. Kenyon	42	55,900
1871	The Lamb	Lord Poulett	25	8,325	1929	Gregalach	Mrs. M. A. G'm'li	66	64,625
1872	Casse Tete	E. Brayley	25	7,275	1930	Shaun Gollin	W. Midwood	41	48,650
1873	Disturbance	Capt. Machell	28	9,800	1931	Grakle	C. R. Taylor	36	37,240
1874	Reugny	Capt. Machell	22	9,450	1932	Forbra	W. Parsonage	36	28,577
1875	Pathfinder	H. Bird	18	9,700	1933	Kellsboro Jack†	Mrs. F. A. Clark	34	36,725
1876	Regal	Capt. Machell	19	7,550	1934	Golden Miller	Miss D. Paget	30	36,325
1877	Austerlitz	F. G. Hobson	16	6,450	1935	Reynoldstown	Maj. Noel F'rlong	27	32,725
1878	Shifnal	J. Nightingall	12	8,450	1936	Reynoldstown	Maj. Noel F'rlong	35	35,100
1879	The Liberator	G. Moore	18	9,500	1937	Royal Mail	H. Lloyd Thomas	33	33,225
1880	Empress	P. Ducrot	14	6,250	1938	Battleship†	Mrs. M. Scott	36	37,545
1881	Woodbrook	Capt. Kirkwood	13	4,900	1939	Workman	Sir A. Maguire	37	31,966
1882	Seaman	Lord Manners	12	6,675	1940	Bogskar	Lord Stalbridge	30	16,887
1883	Zoedone	Prince C. Kinsky	10	4,625	1946	Lovely Cottage	Jock Morant	34	35,300
1884	Voluntary	H. F. Boyd	15	5,175	1947	Caughoo	J. J. McDowell	57	39,728
1885	Roquefort	A. Cooper	19	5,175	1948	Sheila's Cottage	John Proctor	43	36,428
1886	Old Joe	Mr. Douglas	23	6,805	1949	Russian Hero	W. F. Williamson	43	37,868
1887	Gamecock	E. Jay	16	6,080	1950	Freebooter	Mrs. L. Brotherton	49	27,942
1888	Playfair	Col. E. W. Baird	20	5,905	1951	Nickel Coin	Jeffrey Royle	36	24,766
1889	Frigate	M. A. Maher	20	6,170	1952	Teal	Harry Lane	47	25,110
1890	Hex	G. Masterman	16	8,325	1953	Early Mist	J. H. Griffin	31	26,125
1891	Come Away	W. G. Jameson	21	8,400	1954	Royal Tan	J. H. Griffin	29	24,288
1892	Father O'Flynn	C. G. Wilson	25	8,400	1955	Quee Times	Mrs. C. Welman	34	25,085
1893	Cloister	C. G. Duff	15	9,825	1956	E.S.B.	Mrs. Leonard Carver	29	24,416
1894	Why Not	Capt. C. H. Fenwick	14	9,875					
1895	W. M. f. Berneoe	J. Widger	19	9,875					
1896	The Soarer	Lord Wavertree	28	9,875					

* Substitute race. † American bred or owned.

"TRIPLE CROWN" WINNERS IN THE UNITED STATES
(Kentucky Derby, Preakness and Belmont Stakes)

Year	Horse	Owner	Year	Horse	Owner
1919	Sir Barton	J. K. L. Ross	1941	Whirlaway	Warren Wright
1930	Gallant Fox	William Woodward	1943	Count Fleet	Mrs. John Hertz
1935	Omaha	William Woodward	1946	Assault	Robert J. Kleberg
1937	War Admiral	Samuel D. Riddle	1948	Citation	Warren Wright

HOLLYWOOD GOLD CUP

Hollywood Park; 3-year-olds and over; 1¼ miles.

Year	Winner, age	Jockey	Wt.	Win val.	Year	Winner (7)	J. Adams	116	\$ 67,600
1938	Seabiscuit (5).....	G. Woolf.....	133	\$37,150	1949	Solidarity (4).....	R. Neves.....	115	100,000
1939	Kayak II (4).....	G. Woolf.....	125	35,075	1950	Noor (5).....	J. Longden.....	130	100,000
1940	Challidon (4).....	G. Woolf.....	133	36,200	1951	Citation (6).....	S. Brooks.....	120	100,000
1941	Big Pebble (5).....	J. Westrope.....	119	62,475	1952	Two Lea (6).....	H. Moreno.....	113	100,000
1944	Happy Issue (4).....	H. Woodhouse.....	119	60,600	1953	Royal Serenade (5)	J. Longden.....	113	100,000
1945	Challenge Me (4).....	A. Skoronski.....	108	48,230	1954	Correspondent (4)	J. Longden.....	110	100,000
1946	TriPLICATE (5).....	B. James.....	113	79,900	1955	Rejected (5).....	G. Glisson.....	118	100,000
1947	Cover Up (4).....	R. Permane.....	117	73,500	1956	Swaps (4).....	W. Shoemaker.....	130	100,000

KENTUCKY DERBY

Churchill Downs; 3-year-olds; 1¼ miles

Year	Winner	Jockey	Wt.	Win val.	Year	Winner	J. Loftus	117	\$ 9,750
1875	Aristides.....	O. Lewis.....	100	\$2,850	1916	George Smith.....	C. Borel.....	117	16,600
1876	Vagrant.....	R. Swim.....	97	2,950	1918	Exterminator.....	W. Knapp.....	114	14,700
1877	Baden Baden.....	W. Walker.....	100	3,300	1919	Sir Barton.....	J. Loftus.....	112½	20,825
1878	Day Star.....	J. Carter.....	100	4,050	1920	Paul Jones.....	T. Rice.....	126	30,375
1879	Lord Murphy.....	C. Schauer.....	100	3,550	1921	Behave Yourself.....	C. Thompson.....	126	38,450
1880	Fonso.....	G. Lewis.....	105	3,800	1922	Morvich.....	A. Johnson.....	126	46,775
1881	Hindoo.....	J. McLaughlin.....	105	4,410	1923	Zev.....	E. Sande.....	126	53,600
1882	Apollo.....	B. Hurd.....	102	4,560	1924	Black Gold.....	J. D. Mooney.....	126	52,775
1883	Leonatus.....	W. Donohue.....	105	3,760	1925	Flying Ebony.....	E. Sande.....	126	52,950
1884	Buchanan.....	I. Murphy.....	110	3,990	1926	Bubbling Over.....	A. Johnson.....	126	50,075
1885	Joe Cotton.....	E. Henderson.....	110	4,630	1927	Whiskery.....	L. McAtee.....	126	51,000
1886	Ben Ali.....	P. Duffy.....	118	4,890	1928	Reigh Count.....	C. Lang.....	126	55,375
1887	Montrose.....	I. Lewis.....	118	4,200	1929	Clyde Van Dusen.....	L. McAtee.....	126	53,950
1888	Macbeth II.....	G. Covington.....	115	4,740	1930	Gallant Fox.....	E. Sande.....	126	50,725
1889	Spokane.....	T. Kiley.....	118	4,970	1931	Twenty Grand.....	C. Kurtzinger.....	126	48,725
1890	Riley.....	I. Murphy.....	118	5,460	1932	Burgoo King.....	E. James.....	126	52,350
1891	Kingman.....	I. Murphy.....	122	4,680	1933	Brokers Tip.....	D. Meade.....	126	48,925
1892	Azra.....	A. Clayton.....	122	4,230	1934	Cavalcade.....	M. Garner.....	126	28,175
1893	Lookout.....	E. Kunze.....	122	4,090	1935	Omaha.....	W. Saunders.....	126	39,525
1894	Chant.....	F. Goodale.....	122	4,020	1936	Bold Venture.....	I. Hanford.....	126	37,725
1895	Halma.....	J. Perkins.....	122	2,970	1937	War Admiral.....	C. Kurtzinger.....	126	52,050
1896	Ben Brush.....	W. Simms.....	117	4,850	1938	Lawrin.....	E. Arcaro.....	126	47,050
1897	Typhoon II.....	F. Garner.....	117	4,850	1939	Johnstown.....	J. Stout.....	126	46,350
1898	Plaudit.....	W. Simms.....	117	4,850	1940	Gallahadion.....	C. Bierman.....	126	60,150
1899	Manuel.....	F. Taral.....	117	4,850	1941	Whirlaway.....	E. Arcaro.....	126	61,275
1900	Lieut. Gibson.....	J. Boland.....	117	4,850	1942	Shut Out.....	W. D. Wright.....	126	64,225
1901	His Eminence.....	J. Winkfield.....	117	4,850	1943	Count Fleet.....	J. Longden.....	126	60,725
1902	Alan-a-Dale.....	J. Winkfield.....	117	4,850	1944	Pensive.....	C. McCreary.....	126	64,675
1903	Judge Himes.....	H. Booker.....	117	4,850	1945	Hoop Jr.....	E. Arcaro.....	126	64,850
1904	Elwood.....	F. Prior.....	117	4,850	1946	Assault.....	W. Mehrtens.....	126	96,400
1905	Agile.....	J. Martin.....	122	4,850	1947	Jet Pilot.....	E. Guerin.....	126	92,160
1906	Sir Huon.....	R. Troxler.....	117	4,850	1948	Citation.....	E. Arcaro.....	126	83,400
1907	Pink Star.....	A. Minder.....	117	4,850	1949	Ponder.....	S. Brooks.....	126	91,600
1908	Stone Street.....	A. Pickens.....	117	4,850	1950	Middleground.....	W. Boland.....	126	92,650
1909	Wintergreen.....	V. Powers.....	117	4,850	1951	Count Turf.....	C. McCreary.....	126	98,050
1910	Donau.....	F. Herbert.....	117	4,850	1952	Hill Gail.....	E. Arcaro.....	126	96,300
1911	Meridian.....	G. Archibald.....	117	4,850	1953	Dark Star.....	H. Moreno.....	126	90,050
1912	Worth.....	C. H. Shilling.....	117	4,850	1954	Determine.....	R. York.....	126	102,050
1913	Donerail.....	R. Goose.....	117	5,475	1955	Swaps.....	W. Shoemaker.....	126	108,400
1914	Old Rosebud.....	J. McCabe.....	114	9,125	1956	Needles.....	D. Erb.....	126	123,450
1915	Regret.....	J. Notter.....	112	11,450					

PREAKNESS STAKES

Pimlico; 3-year-olds; 1½ miles

Distance 1½ miles prior to 1889; 1¼ miles in 1889; 1½ miles 1894 to 1900, inclusive, and 1908; 1 mile and 70 yards from 1901 to 1907, inclusive; 1 mile in 1909 and 1910; 1½ miles from 1911 to 1924, inclusive. Run at Brooklyn Jockey Club's Gravesend Course from 1894 to 1908, inclusive. Run in two divisions in 1918.

Year	Winner	Jockey	Wt.	Win val.	Year	Winner	W. Costello	110	\$1,250
1873	Survivor.....	G. Barbee.....	110		1883	Jacobus.....	G. Barbee.....	110	1,635
1874	Culpepper.....	M. Donohue.....	110		1884	Knight of Ellerslie.....	S. H. Fisher.....	110	1,905
1875	Tom Ochiltree.....	L. Hughes.....	110		1885	Tecumseh.....	J. McLaughlin.....	118	2,160
1876	Shirley.....	G. Barbee.....	110		1886	The Bard.....	S. H. Fisher.....	118	2,050
1877	Cloverbrook.....	C. Holloway.....	110		1887	Dunboyne.....	W. Donohue.....	118	1,675
1878	Duke of Magenta.....	C. Holloway.....	110		1888	Refund.....	F. Littlefield.....	118	1,185
1879	Harold.....	W. Hughes.....	110	\$2,550	1889	Buddhist.....	H. Anderson.....	118	1,130
1880	Grenada.....	W. Hughes.....	110	2,000	1894	Assignee.....	F. Taral.....	122	1,830
1881	Saunterer.....	W. Costello.....	110	1,950	1895	Belmar.....	F. Taral.....	115	1,350

Preakness Stakes (Cont.)

1896	Margrave.....	H. Griffin.....	115	\$1,350	1926	Display.....	J. Maiben.....	126	\$53,625
1897	Paul Kauvar.....	Thorpe.....	108	1,420	1927	Bostonian.....	A. Abel.....	126	53,100
1898	Sly Fox.....	W. Simms.....	120	1,450	1928	Victorian.....	R. Workman.....	126	60,000
1899	Half Time.....	R. Clawson.....	104	1,580	1929	Dr. Freeland.....	L. Schaefer.....	126	52,325
1900	Hindus.....	H. Spencer.....	106	1,900	1930	Gallant Fox.....	E. Sande.....	126	51,925
1901	The Parader.....	Landry.....	118	1,605	1931	Mate.....	G. Ellis.....	126	48,225
1902	Old England.....	L. Jackson.....	115	2,240	1932	Burgoo King.....	E. James.....	126	50,375
1903	Flocharline.....	W. Gannon.....	113	1,875	1933	Head Play.....	C. Kurtzinger.....	126	26,850
1904	Bryn Mawr.....	E. Hildebrand.....	108	2,355	1934	High Quest.....	R. Jones.....	126	25,175
1905	Cairngorm.....	W. Davis.....	114	2,145	1935	Omaha.....	W. Saunders.....	126	25,325
1906	Whimsical.....	W. Miller.....	108	2,355	1936	Bold Venture.....	G. Woolf.....	126	27,325
1907	Don Enrique.....	G. Mountain.....	107	2,260	1937	War Admiral.....	C. Kurtzinger.....	126	45,600
1908	Royal Tourist.....	E. Dugan.....	112	2,455	1938	Dauber.....	M. Peters.....	126	51,857
1909	Effendi.....	W. Doyle.....	116	3,225	1939	Challedon.....	G. Seabo.....	126	53,710
1910	Layminster.....	R. Estep.....	84	3,300	1940	Bimelech.....	F. A. Smith.....	126	53,230
1911	Watervale.....	E. Dugan.....	112	2,700	1941	Whirlaway.....	E. Arcaro.....	126	49,365
1912	Colonel Holloway.....	C. Turner.....	107	1,450	1942	Alsab.....	B. James.....	126	58,175
1913	Buskin.....	J. Butwell.....	117	1,670	1943	Count Fleet.....	J. Longden.....	126	43,190
1914	Holiday.....	A. Schuttinger.....	108	1,355	1944	Pensive.....	C. McCreary.....	126	60,075
1915	Rhine Maiden.....	D. Hoffman.....	104	1,275	1945	Polynesian.....	W. D. Wright.....	126	66,170
1916	Damrosch.....	L. McAtee.....	115	1,380	1946	Assault.....	W. Mehrtens.....	126	96,620
1917	Kalitan.....	E. Haynes.....	116	4,800	1947	Faultless.....	D. Dodson.....	126	98,005
1918	War Cloud.....	J. Loftus.....	117	12,250	1948	Citation.....	E. Arcaro.....	126	91,870
1918	Jack Hare Jr.....	C. Peak.....	115	11,250	1949	Capot.....	T. Atkinson.....	126	79,985
1919	Sir Barton.....	J. Loftus.....	126	24,500	1950	Hill Prince.....	E. Arcaro.....	126	56,115
1920	Man o' War.....	C. Kummer.....	126	23,000	1951	Bold.....	E. Arcaro.....	126	83,110
1921	Broomspun.....	F. Coltiletto.....	114	43,000	1952	Blue Man.....	C. McCreary.....	126	86,135
1922	Pillory.....	L. Morris.....	114	51,000	1953	Native Dancer.....	E. Guerin.....	126	65,200
1923	Vigil.....	B. Marinelli.....	114	52,000	1954	Hasty Road.....	J. Adams.....	126	91,600
1924	Nellie Morse.....	J. Merimee.....	121	54,000	1955	Nashua.....	E. Arcaro.....	126	67,550
1925	Coventry.....	C. Kummer.....	126	52,700	1956	Fabius.....	W. Hartack.....	126	84,250

SANTA ANITA DERBY

Santa Anita Park; 3-year-olds; 1½ miles

Distance 1½ miles prior to 1938; 1¼ miles in 1947.

Year	Winner	Jockey	Wt.	Win val.	Year	Winner	Jockey	Wt.	Win val.
1935	Gille.....	S. Coucci.....	126	\$19,650	1947	On Trust.....	J. Longden.....	118	\$81,750
1936	He Did.....	D. C. Wright.....	126	26,000	1948	Salmagundi.....	J. Longden.....	118	79,800
1937	Fairy Hill.....	M. Peters.....	121	45,425	1949	Old Rockport.....	G. Glisson.....	118	94,700
1938	Stagehand.....	J. Westrope.....	118	42,350	1950	Your Host.....	J. Longden.....	118	89,800
1939	Ciencia.....	C. Bierman.....	115	41,850	1951	Rough'n Tumble.....	E. Arcaro.....	118	81,500
1940	Sweepida.....	R. Neves.....	120	43,850	1952	Hill Gail.....	T. Atkinson.....	118	92,900
1941	Porter's Cap.....	L. Haas.....	120	44,975	1953	Chanlea.....	E. Arcaro.....	118	84,500
1945	Bymeabond.....	G. Woolf.....	119	37,250	1954	Determine.....	R. York.....	118	84,800
1946	Knockdown.....	R. Permane.....	122	74,680	1955	Swaps.....	J. Longden.....	118	90,400
					1956	Terrang.....	W. Shoemaker.....	118	111,700

SANTA ANITA HANDICAP

Santa Anita Park; 3-year-olds and over; 1¼ miles.

Year	Winner, age	Jockey	Wt.	Win val.	Year	Winner (8)	Jockey	Wt.	Win val.
1935	Azucar (7).....	G. Woolf.....	117	\$108,400	1947	Olhaverly (8).....	M. Peterson.....	116	\$ 98,900
1936	Top Row (5).....	W. D. Wright.....	116	104,600	1948	Talon (6).....	E. Arcaro.....	122	102,500
1937	Rosemont (5).....	H. Richards.....	124	90,700	1949	Vulcan's Forge (4).....	D. Gorman.....	119	102,000
1938	Stagehand (3).....	N. Wall.....	100	91,450	1950	Noor (5).....	J. Longden.....	110	97,900
1939	Kayak II (4).....	J. Adams.....	110	91,100	1951	Moonrush (5).....	J. Longden.....	114	97,900
1940	Seabiscuit (7).....	J. Pollard.....	130	86,650	1952	Miche (7).....	J. Covallii.....	115	104,100
1941	Bay View (4).....	N. Wall.....	108	89,360	1953	Mark-Ye-Well (4).....	E. Arcaro.....	130	97,900
1945	Thumbs Up (6).....	J. Longden.....	130	82,922	1954	Rejected (4).....	W. Shoemaker.....	119	105,900
1946	War Knight (6).....	J. Adams.....	115	101,205	1955	Poona II (4).....	W. Shoemaker.....	117	103,200
					1956	Bobby Brocato (5).....	J. Longden.....	118	97,900

TRAVERS STAKES

Saratoga; 3-year-olds; 1¼ miles

Distance 1¼ miles prior to 1890; 1½ miles in 1890, 1891, and 1892; 1¼ miles in 1893, 1894 and 1897; 1½ miles in 1895, 1901, 1902, and 1903. Run as Travers Midsummer Derby from 1927 to 1932, inclusive, Run at Belmont Park from 1943 to 1945, inclusive.

Year	Winner	Jockey	Wt.	Win val.	1870	Kingfisher.....	C. Miller.....	110	4,950
1864	Kentucky.....	Gilpatrick.....	100	\$2,950	1871	Harry Bassett.....	W. Miller.....	110	5,600
1865	Maiden.....	Sewell.....	97	3,400	1872	Joe Daniels.....	J. Rowe.....	110	5,500
1866	Merrill.....	Abe.....	100	3,500	1873	Tom Bowling.....	R. Swim.....	110	5,400
1867	Ruthless.....	Gilpatrick.....	103	2,850	1874	Attila.....	Barbee.....	110	5,050
1868	The Banshee.....	Smith.....	97	3,150	1875	D'Artagnan.....	Barbee.....	110	4,850
1869	Glenelg.....	C. Miller.....	110	3,000	1876	Sultana.....	Hayward.....	107	3,700

Travers Stakes (Cont.)

1877	Baden Baden.....	Sayers.....	110	\$4,550	1921	Sporting Blood.....	L. Lyke.....	116	\$10,275
1878	Duke of Magenta.....	Hughes.....	118	4,250	1922	Little Chief.....	L. Fator.....	123	11,325
1879	Falsetto.....	I. Murphy.....	118	4,950	1923	Wilderness.....	B. Marinelli.....	120	13,550
1880	Grenada.....	Hughes.....	118	3,750	1924	Sun Flag.....	F. Keogh.....	115	14,675
1881	Hindoo.....	J. McLaughlin.....	118	2,950	1925	Dangerous.....	C. Kummer.....	115	13,425
1882	Carley B.....	Quantrell.....	115	3,450	1926	Mars.....	F. Coltoletti.....	123	15,050
1883	Barnes.....	J. McLaughlin.....	118	3,400	1927	Brown Bud.....	L. Fator.....	120	29,925
1884	Rataplan.....	Fitzpatrick.....	118	4,150	1928	Petee-Wrack.....	S. O'Donnell.....	117	30,550
1885	Bersan.....	Spellman.....	118	4,025	1929	Beacon Hill.....	A. Robertson.....	117	31,820
1886	Inspector B.....	J. McLaughlin.....	118	3,825	1930	Jim Dandy.....	F. J. Baker.....	120	27,050
1887	Carey.....	Blaylock.....	118	3,825	1931	Twenty Grand.....	L. McAtee.....	126	33,000
1888	Sir Dixon.....	J. McLaughlin.....	118	4,625	1932	War Hero.....	J. Gilbert.....	115	23,150
1889	Long Dance.....	Barnes.....	118	3,700	1933	Inlander.....	R. Jones.....	126	21,050
1890	Sir John.....	Bergen.....	118	4,925	1934	Observant.....	L. Humphries.....	112	14,650
1891	Vallera.....	R. Williams.....	122	2,900	1935	Gold Foam.....	S. Coucci.....	112	14,675
1892	Azra.....	Clayton.....	122	2,750	1936	Granville.....	J. Stout.....	127	14,700
1893	Stowaway.....	McDermott.....	107	2,450	1937	Burning Star.....	W. D. Wright.....	117	14,550
1894	Henry of Navarre.....	Taral.....	125	2,350	1938	Thanksgiving.....	E. Arcaro.....	117	14,400
1895	Liza.....	Griffin.....	104	1,125	1939	Eight Thirty.....	H. Richards.....	117	16,575
1897	Rensselaer.....	Taral.....	126	1,425	1940	Fenelon.....	J. Stout.....	122	17,425
1901	Blues.....	Shaw.....	126	6,750	1941	Whirlaway.....	A. Robertson.....	130	16,900
1902	Hermis.....	Rice.....	111	6,750	1942	Shut Out.....	E. Arcaro.....	130	17,825
1903	Ada Nay.....	F. O'Neill.....	106	8,150	1943	Eurasian.....	S. Brooks.....	112	19,850
1904	Broomstick.....	T. Burns.....	129	5,850	1944	By Jimminy.....	E. Arcaro.....	126	25,015
1905	Dandelion.....	Shaw.....	111	8,350	1945	Adonis.....	C. McCreary.....	110	28,680
1906	Gallavant.....	W. Miller.....	111	5,800	1946	Natchez.....	T. Atkinson.....	124	24,750
1907	Frank Gill.....	Notter.....	129	5,800	1947	Young Peter.....	T. May.....	124	19,375
1908	Dorante.....	J. Lee.....	116	5,800	1948	Ace Admiral.....	T. Atkinson.....	108	19,650
1909	Hilarious.....	Scoville.....	129	5,800	1949	Arise.....	C. Errico.....	108	16,000
1910	Dalmatian.....	C. H. Shilling.....	129	4,825	1950	Lights Up.....	G. Hettinger.....	110	16,350
1913	Rock View.....	T. McTaggart.....	129	2,725	1951	Battlefield.....	E. Arcaro.....	123	15,000
1914	Roamer.....	J. Butwell.....	123	3,000	1952	One Count.....	E. Guerin.....	126	16,450
1915	Lady Rotha.....	M. Garner.....	106	2,150	1953	Native Dancer.....	E. Guerin.....	126	18,850
1916	Spur.....	J. Loftus.....	129	3,125	1954	Fisherman.....	H. Woodhouse.....	120	19,500
1917	Omar Khayyam.....	J. Butwell.....	129	5,350	1955	Thinking Cap.....	P. J. Bailey.....	120	19,150
1918	Sun Briar.....	W. Knapp.....	120	7,700	1956	Oh Johnny.....	H. Woodhouse.....	116	33,200
1919	Hannibal.....	L. Ensor.....	120	9,835					
1920	Man of War.....	A. Schuttinger.....	129	9,275					

WASHINGTON PARK FUTURITY

Washington Park; 2-year-olds; 3/4 mile.

Year	Winner	Jockey	Wt.	Win val.	Year	Winner	Jockey	Wt.	Win val.
1937	Tiger.....	A. Robertson.....	117	\$26,135	1948	Model Cadet.....	A. Skoronski.....	118	\$60,750
1940	Porter's Cap.....	C. Bierman.....	117	30,780	1949	Curtice.....	O. Skurlock.....	115	57,850
1941	Alsab.....	R. L. Vedder.....	119	32,575	1950	To Market.....	A. Rivera.....	122	57,390
1942	Occupation.....	L. Balaski.....	122	58,475	1951	Oh Leo.....	P. Bailey.....	122	62,700
1943	Occupy.....	L. Whiting.....	113	43,625	1952	Mr. Paradise.....	E. Arcaro.....	116	79,710
1944	Free for All.....	O. Grohs.....	122	47,850	1953	Hasty Road.....	E. Arcaro.....	122	99,645
1945	Revoked.....	A. Badou.....	118	56,700	1954	Georgian.....	C. McCreary.....	116	88,380
1946	Education.....	J. Adams.....	118	65,125	1955	Swoon's Son.....	D. Erb.....	122	91,405
1947	Bewitch.....	D. Dodson.....	119	63,150	1956	Greek Game.....	W. Hartack.....	122	87,070

WIDENER

Hialeah Park; 3-year-olds and over; 1¼ miles

Run as Widener Challenge Cup Handicap prior to 1938. Run as Widener Handicap from 1938 to 1944, inclusive.

Year	Winner, age	Jockey	Wt.	Win val.	Year	Winner, age	Jockey	Wt.	Win val.
1936	Mantagna (4).....	E. Litzenberger.....	109	\$10,150	1948	El Mono (4).....	P. Roberts.....	112	\$43,800
1937	Columbiana (4).....	H. Le Blanc.....	103	52,000	1949	Coaltown (4).....	T. Atkinson.....	123	42,300
1938	War Admiral (4).....	C. Kurtsinger.....	130	49,550	1950	Royal Governor (6).....	C. Rogers.....	118	43,000
1939	Bull Lea (4).....	I. Anderson.....	119	46,450	1951	Sunglow (4).....	D. Dodson.....	116	54,100
1940	Many Stings (5).....	R. Donoso.....	109	52,000	1952	Spartan Valor (4).....	J. Stout.....	119	51,300
1941	Big Pebble (5).....	G. Seabo.....	109	51,800	1953	Oil Capitol (6).....	C. McCreary.....	114	93,200
1942	The Rhymer (4).....	E. Arcaro.....	111	53,950	1954	Landlocked (4).....	J. Heckmann.....	116	102,200
1944	Four Freedoms (4).....	E. Arcaro.....	109½	29,350	1955	Hasty Road (4).....	J. Adams.....	122	95,400
1946	Armed (5).....	D. Dodson.....	128	45,700	1956	Nashua (4).....	E. Arcaro.....	127	92,600
1947	Armed (6).....	D. Dodson.....	129	43,900					

WORLD RECORDS

Distance	Horse, age, weight, track and location	Date	Time
3/4	Big Racket, 4, 111, Hipodromo de las Americas, Mexico City, Mexico.....	February 5, 1945	:20 1/4
2 1/2 f.	Pichirilo, 2, 117, Hipodromo de las Americas, Mexico City, Mexico.....	March 5, 1954	:26 3/4
3/8	Atoka, 6, 105, Butte, Mont.....	September 7, 1906	:33 1/2
3 1/2 f.	Joe Blair, 5, 115, Juarez, Mexico.....	February 5, 1916	:39
1/2	Beau Madison, 2, 118, Turf Paradise, Phoenix, Ariz.....	March 30, 1957	:45
4 1/2 f.	Saggy, 2, 117, Havre de Grace, Md.....	April 23, 1947	:51 1/4
	Bolero U., 2, 116, Gulfstream Park, Hallandale, Fla.....	April 9, 1957	:51 1/4
5/8	Lucky Mel, 2, 122, Hollywood Park, Inglewood, Calif.....	June 28, 1956	:56 3/4
5 1/2 f.	Porterhouse, 6, 125, Hollywood Park, Inglewood, Calif.....	June 13, 1957	1:02 1/4
5 3/4 f.	Fighting Fox, 4, 126, Empire City, Yonkers, N. Y.....	July 8, 1939	1:07 3/4
	Doublrab, 4, 130, Empire City, Yonkers, N. Y.....	July 18, 1942	1:07 3/4
3/4	*Gelding by Blink-Broken Tendril, 3, 123, Brighton, England.....	August 6, 1929	1:06 1/4
	Bolero, 4, 122, Golden Gate Fields, Albany, Calif.....	May 27, 1950	1:08 1/4
6 1/2 f.	Federal Hill, 3, 122, Gulfstream Park, Hallandale, Fla.....	March 25, 1957	1:15
7/8	El Drag, 4, 115, Hollywood Park, Inglewood, Calif.....	May 21, 1955	1:20
1 mi.	Swaps, 4, 128, Hollywood Park, Inglewood, Calif.....	June 9, 1956	1:33 1/4
1 mi. 70 yd..	Tellarian, 4, 110, Garden State Park, Camden, N. J.....	May 4, 1957	1:39 3/4
1 1/4	Swaps, 4, 130, Hollywood Park, Inglewood, Calif.....	June 23, 1956	1:39
1 1/2	Noor, 5, 123, Golden Gate Fields, Albany, Calif.....	June 17, 1950	1:46 1/4
	Alidon, 4, 116, Hollywood Park, Inglewood, Calif.....	July 4, 1955	1:46 1/4
	Swaps, 4, 130, Hollywood Park, Inglewood, Calif.....	July 4, 1956	1:46 1/4
	Gen. Duke, 3, 122, Gulfstream Park, Hallandale, Fla.....	March 30, 1957	1:46 1/4
1 3/4	Fleet Bird, 4, 123, Golden Gate Fields, Albany, Calif.....	October 24, 1953	1:52 3/4
1 1/4	Noor, 5, 127, Golden Gate Fields, Albany, Calif.....	June 24, 1950	1:58 1/4
1 1/2	Man o' War, 3, 126, Belmont Park, Elmont, N. Y.....	June 12, 1920	2:14 1/4
1 1/2	The Bastard, 3, 124, Newmarket, England.....	October 18, 1929	2:23
1 1/2	Swaps, 4, 130, Hollywood Park, Inglewood, Calif.....	July 25, 1956	2:38 1/4
1 mi. 5 1/2 f.	Distribute, 9, 109, River Downs, Cincinnati, Ohio.....	September 7, 1940	2:51 3/4
1 3/4	Noor, 5, 117, Santa Anita Park, Arcadia, Calif.....	March 4, 1950	2:52 1/4
1 1/2	Pharawell, 5, 119, Gulfstream Park, Hallandale, Fla.....	April 8, 1947	3:13 3/4
2	Polazel, 3, 142, Salisbury, England.....	July 8, 1924	3:15
2 mi. 40 yd..	Winning Mark, 4, 107, Thistle Down Park, Cleveland, Ohio.....	July 20, 1940	3:29 3/4
2 mi. 70 yd..	Filisteo, 7, 116, Pimlico, Baltimore, Md.....	October 30, 1941	3:30 1/4
2 3/4	Midafternoon, 4, 126, Jamaica, Jamaica, N. Y.....	November 15, 1956	3:29 3/4
2 1/2	Centurion, 5, 119, Newbury, England.....	September 29, 1923	3:35
2 1/4	Santiago, 5, 112, Narragansett Park, Pawtucket, R. I.....	September 27, 1941	3:51 1/4
2 1/4	Dakota, 4, 116, Lingfield, England.....	May 27, 1927	3:37 3/4
2 3/8	Wiki Jack, 4, 97, Tijuana, Mexico.....	February 8, 1925	4:15
2 1/2	Miss Grillo, 6, 118, Pimlico, Baltimore, Md.....	November 12, 1948	4:14 3/4
2 3/8	†Worthman, 5, 101, Tijuana, Mexico.....	February 22, 1925	4:51 3/4
2 3/4	Shot Put, 4, 126, Washington Park, Homewood, Ill.....	August 14, 1940	4:48 1/4
2 1/2	†Bosh, 5, 100, Tijuana, Mexico.....	March 8, 1925	5:23
3	Farragut, 5, 113, Agua Caliente, Mexico.....	March 9, 1941	5:15
3 3/8	Winning Mark, 4, 104, Washington Park, Homewood, Ill.....	August 21, 1940	6:13
4	Sotemia, 5, 119, Churchill Downs, Louisville, Ky.....	October 7, 1912	7:10 1/4

* 3/4 mile course at Brighton is started from a hill and is down grade to within one-third of a mile of the finish.
† Track heavy. ‡ Track sloppy.

Straight Course

3/4	Bob Wade, 4, 122, Butte, Mont.....	August 20, 1890	:21 1/4
3/8	King Rhymor, 2, 118, Santa Anita Park, Arcadia, Calif.....	February 27, 1947	:32
1/2	Gloaming, 6, 127, Trentham, Wellington, New Zealand.....	January 12, 1921	:45
4 1/2 f.	The Pimpernel, 2, 118, Belmont Park, Elmont, N. Y.....	May 17, 1951	:49 1/4
	Reneged, 2, 118, Belmont Park, Elmont, N. Y.....	June 7, 1955	:49 1/4
5/8	Devineress, 3, 103, Epsom Downs, Epsom, England.....	June 2, 1933	:54 3/4
5 1/2 f.	Delegate, 7, 113, Belmont Park, Elmont, N. Y.....	October 10, 1951	1:01 1/4
3/4	Vestment, 2, 115, Belmont Park, Elmont, N. Y.....	October 15, 1954	1:07 1/4
6 1/2 f.	Porter's Mite, 2, 119, Belmont Park, Elmont, N. Y.....	September 17, 1938	1:14 3/4
	Native Dancer, 2, 122, Belmont Park, Elmont, N. Y.....	September 27, 1952	1:14 3/4
*Abt 7/8	High Strung, 2, 122, Belmont Park, Elmont, N. Y.....	September 15, 1928	1:19
3/8	First Edition, 4, 126, Hurst Park, Hampton Court England.....	May 25, 1926	1:20
1	Mopsus, 3, 105, Brighton, England.....	June 22, 1939	1:32
1 1/4	Banquet, 3, 108, Monmouth Park, N. J.....	July 17, 1890	2:03 3/4

* 165 feet short of 7/8 mile.

3,000 Winners for Jockey Neves

Horse racing saw its third triple dead heat for first place in 1957. In the fourth race at Hollywood Park in California on

July 3, the judges decided that Joe's Pleasure, Challenger Tom and Leaful hit the wire as one.

LEADING JOCKEYS SINCE 1935

Year	Jockey	Mounts	Winners	Un-placed	Pct.
1935	C. Stevenson	1,099	206	578	.19
1936	B. James	1,106	245	505	.22
1937	J. Adams	1,265	260	642	.21
1938	J. Longden	1,150	236	575	.21
1939	D. Meade	1,284	255	628	.20
1940	E. Dew	1,377	287	709	.21
1941	D. Meade	1,164	210	611	.18
1942	J. Adams	1,120	245	540	.22
1943	J. Adams	1,069	228	511	.21
1944	T. Atkinson	1,539	287	808	.19
1945	J. D. Jessop	1,085	290	445	.27
1946	T. Atkinson	1,377	233	758	.17
1947	J. Longden	1,327	316	566	.24
1948	J. Longden	1,197	319	494	.27
1949	G. Glisson	1,347	270	679	.20
1950	W. Shoemaker	1,640	388	756	.24
	J. Culmone	1,676	388	787	.23
1951	C. Burr	1,162	310	585	.24
1952	A. DeSpirito	1,482	390	633	.26
1953	W. Shoemaker	1,683	485	686	.29
1954	W. Shoemaker	1,251	380	508	.30
1955	W. Hartack	1,702	417	772	.25
1956	W. Hartack	1,387	347	604	.25

LEADING TRAINERS SINCE 1935

(Winners saddled)

Year	Name	Winners	Earnings
1935	H. Jacobs	114	\$95,155
1936	H. Jacobs	177	155,789
1937	H. Jacobs	134	142,474
1938	H. Jacobs	109	116,609
1939	H. Jacobs	106	100,907
1940	D. Womeldorff	108	112,137
1941	H. Jacobs	123	165,964
1942	H. Jacobs	133	186,371
1943	H. Jacobs	128	210,775
1944	H. Jacobs	117	306,821
1945	S. Lipiec	127	238,361
1946	W. Molter	122	329,725
1947	W. Molter	155	833,970
1948	W. Molter	184	1,015,547
1949	W. Molter	129	696,184
	W. H. Bishop	129	236,131
1950	R. H. McDaniel	156	441,590
1951	R. H. McDaniel	164	539,204
1952	R. H. McDaniel	168	573,837
1953	R. H. McDaniel	211	751,957
1954	R. H. McDaniel	206	834,390
1955	F. H. Merrill, Jr.	154	298,794
1956	V. R. Wright	177	532,344

LEADING MONEY-WINNING OWNERS

Year	Name	Amount
1935	A. G. Vanderbilt	\$303,605
1936	Milky Way Farm Stable	206,450
1937	Mrs. Charles S. Howard	214,559
1938	H. Maxwell Howard	226,495
1939	Belair Stud	284,250
1940	Charles S. Howard	334,120
1941	Calumet Farm	475,091
1942	Greentree Stable	414,432
1943	Calumet Farm	267,915
1944	Calumet Farm	601,660
1945	Maine Chance Farm	589,170
1946	Calumet Farm	564,095
1947	Calumet Farm	1,402,436
1948	Calumet Farm	1,269,710
1949	Calumet Farm	1,128,942
1950	Brookmeade Stable	651,399
1951	Greentree Stable	637,242
1952	Calumet Farm	1,283,197
1953	A. G. Vanderbilt	987,306
1954	King Ranch	837,615
1955	Hasty House Farm	832,879
1956	Calumet Farm	1,057,383

TOP MONEY-WINNING HORSES

Year	Horse and age	Starts	1st	Amount
1935	Omaha (3)	9	6	\$142,255
1936	Granville (3)	11	7	110,295
1937	Seabiscuit (4)	15	11	168,580
1938	Stagehand (3)	15	8	189,710
1939	Challedon (3)	15	9	184,535
1940	Bimelech (3)	7	4	110,005
1941	Whirlaway (3)	20	13	272,386
1942	Shut Out (3)	12	8	238,872
1943	Count Fleet (3)	6	6	174,055
1944	Pavot (2)	8	8	179,040
1945	Busher (3)	13	10	273,735
1946	Assault (3)	15	8	424,195
1947	Armed (6)	17	11	376,325
1948	Citation (3)	20	19	709,470
1949	Ponder (3)	21	9	321,825
1950	Noor (5)	12	7	346,940
1951	Counterpoint (3)	15	7	250,525
1952	Crafty Admiral (4)	16	9	277,225
1953	Native Dancer (3)	10	9	513,425
1954	Determine (3)	15	10	328,700
1955	Nashua (3)	12	10	752,550
1956	Needles (3)	8	4	440,850

Nashua Shatters Money-Winning Record

By annexing the winner's purse of \$22,750 in the Camden Handicap at Garden State Park on May 19, 1956, the 4-year-old Nashua became the biggest money-winning race horse of all time. The bay colt's earnings rose to \$1,100,365. Citation previously had been the leader with earnings totaling

\$1,085,760. Nashua broke the record after racing 24 times. The colt raced six more times and concluded its career with an earnings record of \$1,288,565. In three years of racing, Nashua made 30 starts and won 22, placed second four times, third once and ran out of the money only three times.

3,000 Winners for Jockey Neves

Ralph Neves, 38-year-old jockey, rode his 3,000th winning race in 1957 to become the fifth rider in U. S. turf history to

reach that mark. The others are Johnny Longden, Eddie Arcaro, Ted Atkinson and Johnny Adams.

HARNESS RACING

OLIVER WENDELL HOLMES, the famous Autocrat of the Breakfast Table, wrote that the running horse was a gambling toy but the trotting horse was useful and, furthermore, "horse-racing is not a republican institution; horse-trotting is." Oliver Wendell Holmes was a born and bred New Englander and New England was the nursery of the harness racing sport in America. Pacers and trotters were matters of local pride and prejudice in Colonial New England and, shortly after the Revolution, the Messenger and Justin Morgan strains produced many winners in harness racing "matches" along the turnpikes of New York, Connecticut, Rhode Island, Massachusetts, Vermont and New Hampshire.

There was English thoroughbred blood in Messenger and Justin Morgan and, many years later, it was blended in Rysdyk's

Hambletonian, foaled in 1849. Hambletonian was not particularly fast under harness but his descendants have had almost a monopoly of prizes, titles and records in the harness racing game. Hambletonian was purchased as a foal with its dam for a total of \$124 by William Rysdyk of Goshen, N. Y. and made a modest fortune for the purchaser.

Trotters and pacers often were raced under saddle in the old days and, in fact, the custom still survives in some places in Europe. Dexter, the great trotter that lowered the mile record from 2:19 $\frac{3}{4}$ to 2:17 $\frac{1}{4}$ in 1867, was said to handle just as well under saddle as when pulling a sulky. But as sulkies were lightened in weight and improved in design, trotting under saddle became less common and finally faded out in this country.

WORLD RECORDS

Established in a Race or Against Time at One Mile

Source: James C. Harrison, Public Relations Director, United States Trotting Association.

TROTTING ON MILE TRACK

	Record	Holder	Driver	Where Made	Year
All age.....	1:55 1/4	Greyhound	S. F. Palin	Lexington, Ky.	1938
Yearling.....	2:15 3/4	Airdale	H. C. Moody	Lexington, Ky.	1912
2-year-old.....	1:59 $\frac{1}{2}$	Yankee Lass	Frank Ervin	Lexington, Ky.	1957
3-year-old.....	1:58	Titan Hanover	Harry Pownall	Du Quoin, Ill.	1945
4-year-old.....	1:57 1/4(r)	Greyhound	S. F. Palin	Springfield, Ill.	1936
	1:57 1/4	Spencer Scott	Fred Egan	Lexington, Ky.	1941

TROTTING ON HALF-MILE TRACK

All age.....	1:59 3/4	Greyhound	S. F. Palin	Goshen, N. Y.	1937
Yearling.....	2:21 1/2	U. Forbes	H. C. Moody	Louisville, Ky.	1913
2-year-old.....	2:03 1/2(r)	Titan Hanover	Harry Pownall	Delaware, Ohio	1944
3-year-old.....	2:01 2/5(r)	Galophone	Wayne Smart	Delaware, Ohio	1955
	2:01 2/5	Hickory Smoke	John Simpson	Delaware, Ohio	1957
4-year-old.....	1:59 4/5(r)	Darn Safe	B. J. Schue	Saratoga Springs, N. Y.	1957

PACING ON MILE TRACK

All age.....	1:55	Billy Direct	Vic Fleming	Lexington, Ky.	1938
	1:55(r)	Adios Harry	Luther Lyons	Vernon, N. Y.	1955
Yearling.....	2:18 3/4	Royal Lady 2nd	O. M. Powell	Indianapolis	1939
2-year-old.....	1:58(r)	Torpid	John Simpson	Lexington, Ky.	1956
3-year-old.....	1:57(r)	Good Counsel	Frank Ervin	Vernon, N. Y.	1957
4-year-old.....	1:55	Billy Direct	Vic Fleming	Lexington, Ky.	1938
	1:55(r)	Adios Harry	Luther Lyons	Vernon, N. Y.	1955

PACING ON HALF-MILE TRACK

All age.....	1:58 3/5(r)	Hi-Lo's Forbes	Henry Cluekey	Westbury, N. Y.	1953
Yearling.....	2:18 1/4	Lady Patch	O. M. Powell	*	1924
2-year-old.....	2:01 2/5(r)	Good Counsel	Frank Ervin	Delaware, Ohio	1956
3-year-old.....	2:00(r)	Tar Heel	Adelbert Cameron	Delaware, Ohio	1951
	2:00(r)	Torpid	John Simpson	Saratoga Springs, N. Y.	1957
4-year-old.....	1:59 2/5(r)	Adios Harry	Luther Lyons	Westbury, N. Y.	1955
	1:59 $\frac{1}{2}$ (r)	Goldworthy	Wayne Smart	Solon, Ohio	1957

(r) Record made in race. * Data unavailable.

Record Earnings by Harness Horse

Adios Harry, six-year-old pacer owned by J. Howard Lyons of Greenwood, Del., became the No. 1 money-winning harness horse in history on Sept. 7, 1957. A \$5,000 purse won that night at Roosevelt Race-

way, Westbury, N. Y., put Adios Harry's earnings at \$334,510. The previous high for a harness horse was \$332,363, earned by Pronto Don, a trotter who raced from 1947 through 1955.

HISTORY OF TRADITIONAL HARNESS RACING STAKES

The Hambletonian

Three-year-old trotters. One mile. Raced at Syracuse, N. Y., 1926, 1928; at Lexington, Ky., 1927, 1929; at Goshen, N. Y., 1930-42, 1944-56; at Yonkers, N. Y., 1943; at Du Quoin, Ill., 1957.

Year	Winner	Driver	Best time	Value
1926	Guy McKinney	Nat Ray	2.04 3/4	\$73,451.32
1927	Iosola's Worthy	Marvin Childs	2.03 3/4	54,694.44
1928	Spencer	W. H. Leese	2.02 1/2	66,226.25
1929	Walter Dear	W. R. Cox	2.02 3/4	60,309.60
1930	Hanover's Bertha	Tom Berry	2.03	56,859.84
1931	Calumet Butler	R. McMahon	2.03 1/4	50,921.39
1932	The Marchioness	W. Caton	(a) 2.01 1/4	49,489.26
1933	Mary Reynolds	Ben White	2.03 3/4	40,459.88
1934	Lord Jim	H. M. Parshall	2.02 3/4	25,845.44
1935	Greyhound	Sep Palin	2.02 1/4	33,321.00
1936	Rosalind	Ben White	2.01 3/4	35,643.83
1937	Shirley Hanover	H. Thomas	2.01 1/2	37,912.58
1938	McLin Hanover	H. Thomas	2.02 1/4	37,962.37
1939	Peter Astra	H. M. Parshall	2.04 1/4	40,502.46
1940	Spencer Scott	F. Egan	2.02	43,685.45
1941	Bill Gallon	Lee Smith	2.05	38,729.86
1942	The Ambassador	Ben White	2.04	38,954.38
1943	Volo Song	Ben White	2.02 1/2	42,298.03
1944	Yankee Maid	H. Thomas	2.04	33,577.12
1945	Titan Hanover	H. Pownall	2.04	50,196.96
1946	Chestertown	Tom Berry	2.02 1/2	50,995.57
1947	Hoot Mon	Sep Palin	2.00	46,267.93
1948	Demon Hanover	H. R. Hoyt	2.02	59,941.18
1949	Miss Tilly	Fred Egan	2.01 2/5	69,791.08
1950	Lusty Song	Del Miller	2.02	75,209.12
1951	Mainliner	Guy Crippen	2.02 3/5	95,263.93
1952	Sharp Note	Bi Shively	2.02 2/5	87,637.55
1953	Helicopter	Harry Harvey	(b) 2.01 3/5	117,117.98
1954	Newport Dream	Adelbert Cameron	2.02 4/5	106,830.68
1955	Scott Frost	Joe O'Brien	2.00 3/5	86,863.32
1956	The Intruder	Ned Bower	2.01 2/5	100,603.99

(a) By Hollywood Dennis. (b) By Morse Hanover.

1957 HAMBLETONIAN

First Division—Hickory Smoke, 1-1; Buckeye Demon, 2-2; Cassin Hanover, 3-3; Royal Rodney, 4-9; Lord Chuck, 11-4; Bond Hanover, 5-5; Storm Cloud, 6-7; Flicka Frost, 10-6; Philip Frost, 7-8; Dolph Hanover, 8-11; Monty Hanover, 9-10. Times—2:01, 2:01 1/5.

Second Division—Hoot Song, 1-1; Section Man, 2-2; Speedster, 3-3; Mudge Hanover, 4-4; Marmon Hanover, 5-5;

Abel Hanover, 6-6; Major Newport, 8-7; Cindy Gal, 9-8; Silver Way, 10-9; Glory Hanover, 7-x. Times—2:02 1/5, 2:02.

Trot-Off—1, Hickory Smoke; 2, Hoot Song. Time—2:08 4/5. Winner, Hickory Smoke, driven by John Simpson, owned by L. B. Sheppard and A. C. Mudge. Winner's purse—\$47,917.62. Total purse—\$111,126.25.

Little Brown Jug

Three-year-old pacers. Raced at Delaware County Fair Grounds, Delaware, Ohio.

Year	Winner	Driver	Best time	Value
1946	Ensign Hanover	Wayne Smart	(a) 2:02 3/4	\$35,358.65
1947	Forbes Chief	Adelbert Cameron	2:05	38,200.00
1948	Knight Dream	Frank Safford	2:07 1/5	47,528.58
1949	Good Time	Frank Ervin	2:03 2/5	58,281.30
1950	Dudley Hanover	Del Miller	2:02 3/5	56,525.47
1951	Tar Heel	Adelbert Cameron	2:00	66,280.55
1952	Meadow Rice	Wayne Smart	2:01 3/5	60,463.35
1953	Keystoner	Frank Ervin	(b) 2:02 3/5	54,972.21
1954	Adios Harry	Morris MacDonald	(c) 2:01 2/5	69,332.06
1955	Quick Chief	Bill Haughton	(d) 2:00	66,608.83
1956	Noble Adios	John Simpson	2:00 4/5	52,666.05

(a) By Royal Chief. (b) By Newport Chief. (c) By Phantom Lady. (d) By Dottie's Pick.

1957 LITTLE BROWN JUG

Raced in two divisional heats and a final; first five in each heat raced again in final. The results:

Torpid, 1-1; Meadow Lands, 1-5; Morris Eden, 2-4; Adios Express, 5-2; Maxine's Dream, 3-3; Newport Judy, 2-9; Great Adios, 3-8; Meadow Rhythm, 4-7; Duke of Wellington,

4-10; Razzle Dazzle, 5-6. Times—First division, Torpid 2:00 4/5. Second division, Meadow Lands, 2:01. Final, Torpid, 2:03 2/5.

Winner, Torpid, driven by John Simpson, owned by Max Hochberg. Winner's purse—\$27,205.41.

Standard Measurements in Sports

BASEBALL

- Home plate to pitcher's box—60 feet 6 inches.
- Plate to second base—127 feet 3 $\frac{3}{8}$ inches.
- Distance from base to base (home plate included)—90 feet.
- Size of bases—15 inches by 15 inches.
- Pitcher's plate—24 inches by 6 inches.
- Batter's box—6 feet by 4 feet.
- Home plate—17 inches by 17 inches, cut to a point at rear.
- Home plate to backstop—Not less than 60 feet.
- Weight of ball—Not less than 5 ounces nor more than 5 $\frac{1}{4}$ ounces.
- Circumference of ball—Not less than 9 inches nor more than 9 $\frac{1}{4}$ inches.
- Bat—Must be round, not over 2 $\frac{3}{4}$ inches in diameter at thickest part, nor more than 42 inches in length, and of hardwood in one piece or laminated.

FOOTBALL

- * Length of field—120 yards.
- Width of field—53 $\frac{1}{3}$ yards (160 feet).
- Height of goal posts—20 feet.
- Height of crossbar—10 feet.
- Width of goal posts—18 feet 6 inches, inside to inside, and not more than 19 feet 2 inches, outside to outside.
- Length of ball—11 to 11.25 inches (long axis).
- Circumference of ball—21.25 to 21.50 inches (middle); 28 to 28.5 inches (long axis).
- * Includes 10 yards of end zone on either side.

LAWN TENNIS

- Size of court—Rectangle 78 feet long and 27 feet wide (singles); 78 feet long and 36 feet wide (doubles).
- Height of net—3 feet in center, gradually rising to reach 3-foot 6-inch posts at each side of court.
- Ball—Shall be more than 2 $\frac{1}{2}$ inches and less than 2 $\frac{5}{8}$ inches in diameter and weigh more than 2 ounces and less than 2 $\frac{1}{16}$ ounces.
- Service line—21 feet from net.

BOWLING

- Alley dimensions—Overall length 62 feet 10 $\frac{3}{16}$ inches, measuring from foul line to pit edge (not including tail plank), with $\frac{1}{2}$ inch tolerance permitted. Foul line to No. 1 pinspot 60 feet, with $\frac{1}{2}$ inch tolerance permitted. Alley bed width, not less than 41 inches, nor more than 42. Approach, not less than 15 feet. Gutters, not less than 9 inches nor more than 9 $\frac{1}{2}$ inches wide.
- Ball—Circumference, not more than 27 inches. Weight, 10 pounds minimum, 16 pounds maximum. Balance, tolerance of 3 ounces between top finger hole,

side and bottom. One ounce tolerance between right and left sides. One ounce tolerance between front and back sides.

GOLF

- Weight of ball—Not greater than 1.620 ounces.
- Size of ball—Not less than 1.680 inches in diameter.
- Velocity of ball—Not greater than 250 feet per second.
- Hole—Shall be 4 $\frac{1}{4}$ inches in diameter and at least 4 inches deep.
- Clubs—No restrictions on the size; 14 is the maximum number permitted.

ICE HOCKEY

- Size of rink—200 feet long by 85 feet wide (desired size).
- Size of goal—6 feet wide by 4 feet in height.
- Puck—1 inch thick and 3 inches in diameter; made of vulcanized rubber; weight—6 $\frac{1}{4}$ ounces (unofficial).
- Length of stick—Not more than 53 inches from heel to end of shaft nor 14 $\frac{3}{4}$ inches from heel to end of blade. Blade should not exceed 3 inches in height, except goalkeeper's stick, which shall not exceed 3 $\frac{1}{2}$ inches in height except at the heel, where it must not exceed 4 $\frac{1}{2}$ inches.

BASKETBALL

(National Collegiate A. A. Rules)

- Playing court—94 feet long by 50 feet wide (maximum dimensions).
- Baskets—Rings 18 inches in inside diameter, with white cord nets, 15 to 18 inches in length. Each ring is made of metal and is not more than $\frac{5}{8}$ of an inch in diameter.
- Height of basket ring—10 feet.
- Weight of ball—Not less than 20 ounces nor more than 22.
- Circumference of ball—No greater than 30 inches and not less than 29 $\frac{1}{2}$.
- Free-throw line—15 feet from the face of the backboard.

BOXING

- Size of ring—The matches take place in an area, not less than 18 nor more than 20 feet square. It is enclosed by three 1-inch covered ropes. The floor has a 2-inch padding that extends at least 6 inches beyond the roped area in the case of elevated rings and 3 feet if the ring is at floor level.
- Gloves—In professional fights, 8-ounce gloves generally are used, except in title contests, where 6-ounce gloves are the custom. A.A.U., 8 ounces up to welter-weight, 10 ounces in heavier divisions. Colleges, minimum of 12 ounces.

1957 CHAMPIONS AND RECORDS

ICE HOCKEY

National League

REGULAR SEASON 1956-57

Final Standing of the Clubs

	Goals					
	W	L	T	For	Agst.	Pts.
Detroit Red Wings.....	38	20	12	198	157	88
Montreal Canadiens.....	35	23	12	210	155	82
Boston Bruins.....	34	24	12	195	174	80
New York Rangers.....	26	30	14	184	227	66
Toronto Maple Leafs.....	21	34	15	174	192	57
Chicago Black Hawks....	16	39	15	169	225	47

Leading Scorers

	GP	G	A	Pts.	PIM
Gordon Howe, Detroit.....	70	44	45	89	72
Ted Lindsay, Detroit.....	70	30	55	85	103
Jean Beliveau, Montreal.....	69	33	51	84	105
Andy Bathgate, New York.....	70	27	50	77	60
Ed Litzenberger, Chicago.....	70	32	32	64	48
Maurice Richard, Montreal.....	63	33	29	62	74
Don McKenney, Boston.....	69	21	39	60	31
Dickie Moore, Montreal.....	70	29	29	58	56
Henri Richard, Montreal.....	63	18	36	54	71
Norm Ullman, Detroit.....	64	16	36	52	47
Doug Harvey, Montreal.....	70	6	44	50	92
Real Chevrefils, Boston.....	70	31	17	48	38
John Wilson, Chicago.....	70	18	30	48	24
Bert Olmstead, Montreal.....	64	15	33	48	74
Leo Labine, Boston.....	67	18	29	47	128
Andy Hebenton, New York.....	70	21	23	44	10
George Armstrong, Toronto.....	54	18	26	44	37
Dean Prentice, New York.....	68	19	23	42	38
Glen Skov, Chicago.....	67	14	28	42	69
Sid Smith, Toronto.....	70	17	24	41	4
Alex Delvecchio, Detroit.....	48	16	25	41	8
Bill Gadsby, New York.....	70	4	37	41	72
Dickie Duff, Toronto.....	70	26	14	40	50
Vic Stasiuk, Boston.....	64	24	16	40	69
Bernie Geoffrion, Montreal.....	41	19	21	40	18
Doug Mohns, Boston.....	68	6	34	40	89
Fleming Mackell, Boston.....	65	22	17	39	73
Dave Creighton, New York.....	70	18	21	39	42
John Peirson, Boston.....	68	13	26	39	41

All-Star Selections

First Team

Goal..... Glenn Hall, Detroit
 Defense..... Doug Harvey, Montreal
 Defense..... Red Kelly, Detroit
 Center..... Jean Beliveau, Montreal
 R. W..... Gordon Howe, Detroit
 L. W..... Ted Lindsay, Detroit

Second Team

Plante, Montreal
 Flaman, Boston
 Gadsby, New York
 Litzenberger, Chicago
 Richard, Montreal
 Chevrefils, Boston

Trophy Winners

Hart (Most valuable player)—Gordon Howe, Detroit
 Ross (Leading scorer)—Gordon Howe, Detroit
 Lady Byng (Sportsmanship)—Andy Hebenton, New York
 Calder (Leading rookie)—Larry Regan, Boston
 Vezina (Leading goalie)—Jacques Plante, Montreal
 Norris (Best defenseman)—Doug Harvey, Montreal

STANLEY CUP PLAYOFFS

Championship Series

Montreal Canadiens won the Stanley Cup, defeating Boston Bruins, 4 games to 1.

*April 6—Montreal 5, Boston 1

*April 9—Montreal 1, Boston 0

April 11—Montreal 4, Boston 2

April 14—Boston 2, Montreal 0

*April 16—Montreal 5, Boston 1

* At Montreal

Preliminary Series

Boston Bruins defeated Detroit Red Wings, 4 games to 1.

*March 26—Boston 3, Detroit 1

*March 28—Detroit 7, Boston 2

March 31—Boston 4, Detroit 3

April 2—Boston 2, Detroit 0

*April 4—Boston 4, Detroit 3

* At Detroit

Montreal Canadiens defeated New York Rangers, 4 games to 1.

March 26—Montreal 4, New York 1

March 28—New York 4, Montreal 3 (13:38 overtime)

*March 30—Montreal 8, New York 3

*April 2—Montreal 3, New York 1

*April 4—Montreal 4, New York 3 (1:11 overtime)

* At Montreal

Leading Scorers

	GP	G	A	Pts.	PIM
Bernie Geoffrion, Montreal.....	10	11	7	18	2
Jean Beliveau, Montreal.....	10	6	6	12	15
Maurice Richard, Montreal.....	10	8	3	11	8
Dickie Moore, Montreal.....	10	3	7	10	4
Bert Olmstead, Montreal.....	10	0	9	9	13
Fleming Mackell, Boston.....	10	5	3	8	4
Henri Richard, Montreal.....	10	2	6	8	10
Gordon Howe, Detroit.....	5	2	5	7	6
Doug Harvey, Montreal.....	10	0	7	7	10
Ted Lindsay, Detroit.....	5	2	4	6	8
Don McKenney, Boston.....	10	1	5	6	4
Alex Delvecchio, Detroit.....	5	3	2	5	2
Floyd Curry, Montreal.....	10	3	2	5	2
Camille Henry, New York.....	5	2	3	5	0
Doug Mohns, Boston.....	10	2	3	5	2
Leo Boivin, Boston.....	10	2	3	5	12
Leo Labine, Boston.....	10	2	3	5	14

U. S. Dog Team Victor

Dog teams from the United States placed first and second in a world championship dog derby held at The Pas, Man., in 1957. Dr. Roland Lombard of Auburndale, Mass., won first prize by driving his Siberian huskies over the 120-mile route in 9 hours 30 minutes 36 seconds. Emile Martel, driving a team for the Briar Patch Farms of Putney, Vt., was second.

Minor League and Amateur Hockey

AMERICAN LEAGUE

Final Standing of the Clubs

	W	L	T	Goals		Pts.
				For	Agst.	
Providence.....	34	22	8	236	168	76
*Cleveland.....	35	26	3	249	210	73
Rochester.....	34	25	5	224	199	73
Hershey.....	32	28	4	223	237	68
Buffalo.....	25	37	2	209	271	52
Springfield.....	19	41	4	217	274	42

* Won playoffs.

Leading Scorers

	GP	G	A	Pts.	PIM
Fred Glover, Cleveland.....	64	42	57	99	111
Willie Marshall, Hershey.....	64	35	59	94	18
Paul Larivee, Providence.....	64	46	43	89	24
Jimmy Moore, Cleveland.....	64	23	66	89	31
Bronco Horvath, Rochester.....	56	37	44	81	39
Bo Elik, Cleveland.....	61	40	40	80	82
Duncan Fisher, Hershey.....	64	40	38	78	59
Ken Wharram, Buffalo.....	64	28	49	77	18
Sam Bettio, Buffalo.....	62	38	29	67	40
Larry Wilson, Buffalo.....	64	22	45	67	71

WESTERN LEAGUE

Final Standing of the Clubs

PRAIRIE DIVISION

	W	L	T	Goals		Pts.
				For	Agst.	
*Brandon.....	44	22	4	250	186	92
Edmonton.....	39	27	4	239	212	82
Calgary.....	29	37	4	220	230	62
Winnipeg.....	23	45	2	198	273	48

COAST DIVISION

Seattle.....	36	28	6	263	225	78
New Westminster.....	34	31	5	215	235	73
Victoria.....	29	34	7	208	204	65
Vancouver.....	27	37	6	203	231	50

* Won playoffs.

Leading Scorers

	GP	G	A	Pts.	PIM
Guyle Fielder, Seattle.....	69	33	89	122	30
Phil Maloney, Vancouver.....	70	43	55	98	8
Ed Dorohoy, Seattle.....	70	31	55	86	70
Ray Manson, Brandon.....	70	40	43	83	18
Ray Kinasewich, Seattle.....	70	44	38	82	62
Sid Finney, Calgary.....	68	41	38	79	47
Norman Johnson, Brandon.....	70	32	46	78	75
Colin Kilburn, Victoria.....	70	32	39	71	76
Bill Wylie, Vancouver.....	68	18	52	70	16
Gordon Fashoway, New W'minster.	70	41	25	66	36

Other Champions

Canada

Edinburgh Trophy (Professional championship of Canada)—
 Brandon Regals.
 Allan Cup (senior amateur)—Whitby Dunlops.
 Memorial Cup (junior amateur)—Flin Flon Bombers.

United States

National Amateur (Senior)—Minneapolis Bungaloes
 National Amateur (Junior)—Detroit Arrowsmiths
 National Collegiate—Colorado College

QUEBEC LEAGUE

Final Standing of the Clubs

	W	L	T	Goals		Pts.
				For	Agst.	
*Quebec.....	40	21	7	226	175	87
Chicoutimi.....	34	28	6	225	199	74
Three Rivers.....	29	32	7	168	197	65
Montreal.....	28	34	6	191	211	62
Shawinigan Falls.....	24	35	9	202	213	57
Ottawa.....	7	12	1	57	74	15

* Won playoffs.

Leading Scorers

	GP	G	A	Pts.	PIM
Orval Tessier, Quebec.....	68	43	38	81	24
Marcel Bonin, Quebec.....	68	20	60	80	88
Dick Wray, Shawinigan.....	66	33	35	68	9
Allan Teal, Quebec.....	66	23	41	64	48
Fern Perreault, Chicoutimi.....	67	22	39	61	48
Allan Hicks, Chicoutimi.....	65	23	36	59	66
Gene Achtymickuk, Quebec.....	62	16	41	57	40
Kelley Burnett, Montreal.....	67	22	35	57	28
Del Topoli, Chicoutimi.....	67	19	37	56	47
Ervin Grosse, Shawinigan.....	58	20	36	56	22
Andre Corriveau, Montreal.....	63	22	34	56	8

Amateur

WORLD CHAMPIONSHIP

(At Moscow, Russia)

Final Standing of the Clubs

	W	L	T	Pts.
Sweden.....	6	0	1	13
Russia.....	5	0	2	12
Czechoslovakia.....	5	1	1	11
Finland.....	4	3	0	8
East Germany.....	3	4	0	6
Poland.....	2	5	0	4
Austria.....	0	6	1	1
Japan.....	0	6	1	1

EASTERN LEAGUE

Final Standing of the Clubs

	W	L	T	Goals		Pts.
				For	Agst.	
*Charlotte.....	50	13	1	364	239	101
Philadelphia.....	34	27	3	277	233	71
New Haven.....	31	30	3	276	262	65
Johnstown.....	31	33	0	320	290	62
Cinton.....	23	39	2	253	325	48
Washington.....	18	45	1	256	397	37

* Won playoffs.

INTERNATIONAL LEAGUE

Final Standing of the Clubs

	W	L	T	Goals		Pts.
				For	Agst.	
*Cincinnati.....	50	9	1	245	113	101
Indianapolis.....	26	29	5	168	178	57
Huntington.....	26	30	4	181	188	56
Toledo.....	26	30	4	166	186	56
Fort Wayne.....	25	29	6	170	177	56
Troy.....	15	41	4	135	223	34

* Won playoffs.

PROFESSIONAL BASKETBALL NATIONAL BASKETBALL ASSOCIATION

Source: Haskell Cohen, Publicity Director, National Basketball Assn.

REGULAR SEASON

Final 1956-57 Standing of the Clubs

EASTERN DIVISION

	W	L	Pct.	Scoring Avg. For	Agst.
Boston Celtics.....	44	28	.611	105.5	100.2
Syracuse Nationals.....	38	34	.528	99.7	101.1
Philadelphia Warriors.....	37	35	.514	100.4	98.8
New York Knickerbockers	36	36	.500	100.8	100.9

WESTERN DIVISION

	W	L	Pct.	Scoring Avg. For	Agst.
*St. Louis Hawks.....	34	38	.472	98.5	98.6
Fort Wayne Pistons.....	34	38	.472	96.4	98.7
Minneapolis Lakers.....	34	38	.472	102.3	103.1
Rochester Royals.....	31	41	.431	93.4	95.6

* Defeated Fort Wayne and Minneapolis in two-game playoff for first place.

PLAYOFFS

Eastern Division

Syracuse defeated Philadelphia, 2 games to 0.
Final—Boston defeated Syracuse, 3 games to 0

Western Division

Minneapolis defeated Ft. Wayne, 2 games to 0.
Final—St. Louis defeated Minneapolis, 3 games to 0.

Championship Series

Boston defeated St. Louis, 4 games to 3.
*March 30—St. Louis 125, Boston 123 (2-OT)

*March 31—Boston 119, St. Louis 99

April 6—St. Louis 100, Boston 98

April 7—Boston 123, St. Louis 118

*April 9—Boston 124, St. Louis 109

April 11—St. Louis 96, Boston 94

*April 13—Boston 125, St. Louis 123 (2-OT)

* At Boston.

Leading Scorers

	GP	FG	FT	Pts.	Avg.
Paul Arizin, Phila.....	71	613	591	1817	25.6
Bob Pettit, St. L.....	71	613	529	1755	24.7
Dolph Schayes, Syr.....	72	496	625	1617	22.5
Neil Johnston, Phila.....	69	520	535	1575	22.8
George Yardley, Ft. W.....	72	522	503	1547	21.5
Clyde Lovellette, Mpls.....	69	574	286	1434	20.8
Bill Sharman, Bost.....	67	516	381	1413	21.1
Bob Cousy, Bost.....	64	478	363	1319	20.6
Ed Macauley, St. L.....	72	414	359	1187	16.5
Dick Garmaker, Mpls.....	72	406	365	1177	16.3
Jack Twyman, Roch.....	72	449	276	1174	16.3
Tom Heinsohn, Bost.....	72	446	271	1163	16.2
Maurice Stokes, Roch.....	72	434	256	1124	15.6
Harry Gallatin, N. Y.....	72	332	415	1079	15.0
Ken Sears, N. Y.....	72	343	383	1069	14.8
Joe Graboski, Phila.....	72	390	252	1032	14.3
Carl Braun, N. Y.....	72	378	245	1001	13.9
Vern Mikkelsen, Mpls.....	72	322	342	986	13.7
Ed Conlin, Syr.....	71	335	283	953	13.4
John Kerr, Syr.....	72	333	225	891	12.4

Individual Leaders

Points—Paul Arizin, Philadelphia.....	1817
Scoring average—Paul Arizin, Philadelphia.....	25.6
Field goals—Paul Arizin, Philadelphia, and Bob Pettit, St. Louis.....	613
Field goal percentage—Neil Johnston, Philadelphia.....	447
Free throws scored—Dolph Schayes, Syracuse.....	625
Free throws scored, percentage—Bill Sharman, Boston.....	905
Rebounds—Maurice Stokes, Rochester.....	1256
Assists—Bob Cousy, Boston.....	478
Personal fouls committed—Vern Mikkelsen, Minneapolis.....	312
Most points, one game—Bob Pettit, St. Louis.....	39

All-Star Selections

FIRST TEAM—Forwards: Dolph Schayes, Syracuse; Paul Arizin, Philadelphia. Center: Bob Pettit, St. Louis. Guards: Bob Cousy, Boston; Bill Sharman, Boston.

SECOND TEAM—Forwards: George Yardley, Ft. Wayne; Maurice Stokes, Rochester. Center: Neil Johnston. Guards: Dick Garmaker, Minneapolis; Slater Martin, St. Louis.

ROOKIE OF THE YEAR—Tom Heinsohn, Boston.

Leading Scorers

	GP	FG	FT	Pts.	Avg.
Bob Pettit, St. L.....	10	98	102	298	29.8
Tom Heinsohn, Bost.....	10	90	49	229	22.9
Bill Sharman, Bost.....	10	75	61	211	21.1
Bob Cousy, Bost.....	10	67	68	202	20.2
Cliff Hagan, St. Louis.....	10	62	46	170	17.0
Slater Martin, St. L.....	10	55	56	166	16.6
Ed Macauley, St. L.....	10	44	54	142	14.2
Bill Russell, Bost.....	10	54	31	139	13.9

Individual Leaders

Points—Bob Pettit, St. Louis.....	298
Scoring average—Bob Pettit, St. Louis.....	29.8
Field goal percentage—Frank Ramsey, Boston.....	46.3
Free throw percentage—Bill Sharman, Boston.....	95.3
Rebounds—Bill Russell, Boston.....	244
Assists—Bob Cousy, Boston.....	93
Personal fouls committed—Jack McMahon, St. Louis and Arnie Risen, Boston.....	48
Most points, one game—Bob Pettit, St. Louis.....	39

East Triumphs in N.B.A.'s All-Star Game

The East defeated the West, 109 to 97, in the National Basketball Association's seventh annual All-Star game in Boston on Jan. 15, 1957. It was the East's fifth victory in the series. Bob Cousy and Neil Johnston were the stars in the triumph, Cousy winning the game's most valuable player trophy for his all-around performance. Johnston was the victor's high scorer with 19 points.

Dec. 17 to Dec. 17—60 Straight Victories

A collegiate record of sixty consecutive victories by the University of San Francisco basketball team began and ended on the same day, December 17. The Dons won the first game in the string on Dec. 17, 1954, beating San Diego State, and were toppled by Illinois on Dec. 17, 1956. Immediately prior to the Illinois defeat, San Francisco was beaten by the 1956 U. S. Olympic championship team but that game did not affect the streak since it was an exhibition against a non-collegiate opponent.

SPEED SKATING

World Championships

(At Ostersund, Sweden)

All-around—Knut Johannessen, Norway	188.952 pts.
500 meters—Eugeny Grishin, U.S.S.R.	0:42.3
1,500 meters—Boris Schilkov, U.S.S.R.	2:13.9
5,000 meters—Knut Johannessen, Norway	8:08.9
10,000 meters—Knut Johannessen, Norway	16:33.9

North American Outdoor

(At Detroit)

Champion—Jim Campbell, Chicago	16 pts.
220 yds.—Gene Sandvig, Minneapolis	0:20.2
440 yds.—Jim Campbell, Chicago	0:38.2
880 yds.—Bobby Snyder, Detroit	1:31.8
¾-mile—Phil Elliot, Chicago	2:10.6
1 mile—Gene Sandvig, Minneapolis	3:12.3
2 miles—Charles Burke, Chicago	6:16.6
5 miles—Floyd Bedbury, St. Paul, Minn.	17:28.8
Intermediate—Ron Eikaas, Minneapolis	21 pts.
Junior—Eddie Rudolph, Chicago	18 pts.
Juvenile—Don Blasy, Midland, Mich., and Fred Fischl, Chicago (tie)	10 pts.

WOMEN

Champion—Jeanne Robinson, Detroit	21 pts.
220 yds.—Mary Novak, Chicago	0:22.3
440 yds.—Mary Novak, Chicago	0:43.1
880 yds.—Jeanne Robinson, Detroit	1:38.6
¾-mile—Jeanne Robinson, Detroit	2:28.9
1 mile—Jeanne Robinson, Detroit	3:35.5
Intermediate—Sandra Faye, Minneapolis	14 pts.
Junior—Kathy Mulholland, New York	10 pts.
Juvenile—Sandra Danielson, Minneapolis	11 pts.

North American Indoor

(At Champaign, Ill.)

Champion—Jack Disney, Pasadena, Calif.	13 pts.
440 yds.—Jack Disney, Pasadena, Calif.	0:38.9
880 yds.—Jim Campbell, Chicago	1:20.0
¾-mile—Jack Disney, Pasadena, Calif.	2:04.4
1 mile—William Disney, Los Angeles	2:55.7
2 miles—Arnold Uhrlass, New York	6:18.8
Intermediate—Terry McDermott, Essexville, Mich.	14 pts.
Junior—Mike Johnson, West Allis, Mich.	11 pts.
Juvenile—Don Reno, Champaign, Ill.	11 pts.

WOMEN

Champion—Jean Ashworth, Wilmington, Mass.	13 pts.
440 yds.—Mary Novak, Chicago	0:43.0
880 yds.—Jean Ashworth, Wilmington, Mass.	1:26.9
¾-mile—Jean Ashworth, Wilmington, Mass.	2:16.8
1 mile—Jeanne Robinson, Detroit	3:17.0
Intermediate—Mary Lou Brombach, Pittsfield, Mass.	15 pts.
Junior—Kathy Mulholland, New York	11 pts.
Juvenile—Sandra Danielson, Minneapolis	13 pts.

World Championships

(At Colorado Springs, Colo.)

Men—David Jenkins, Colorado Springs, Colo.	
Women—Carol Heiss, Ozone Park, N. Y.	
Pairs—Barbara Wagner-Robert Paul, Toronto, Ont.	
Dance—June Markham-Courtney Jones, Great Britain	

North American Championships

(At Rochester, N. Y.)

Men—David Jenkins, Colorado Springs, Colo.	
Women—Carol Heiss, Ozone Park, N. Y.	
Pairs—Barbara Wagner-Robert Paul, Canada	
Dance—Geraldine Fenton-William McLachlan, Canada	

World Championships—Women

(At Imatra, Finland)

All-around—Inga Artamonova, U.S.S.R.	207.500 pts.
500 meters—Sofia Kondakova, U.S.S.R.	0:48.8
1,000 meters—Inga Artamonova, U.S.S.R.	1:39.9
1,500 meters—Inga Artamonova, U.S.S.R.	2:37.0
3,000 meters—Eevi Huttunen, Finland	5:38.3

United States Outdoor

(At St. Paul, Minn.)

Champion—Ken Bartholomew, Minneapolis, and Bobby Snyder, Detroit (tie)	15 pts.
220 yds.—William Carow, West Allis, Wis.	0:18.5
440 yds.—Ken Bartholomew, Minneapolis	0:36.0
880 yds.—Bobby Snyder, Detroit	1:17.2
¾-mile—Ken Bartholomew, Minneapolis	2:13.2
1 mile—Bobby Snyder, Detroit	3:01.5
2 miles—Charles Burke, Chicago	5:49.3
5 miles—Floyd Bedbury, St. Paul, Minn.	15:19.5
Intermediate—Dave Arends, Cedar Rapids, Iowa	20 pts.
Junior—Tom Weisel, White Fish Bay, Wis.	20 pts.
Juvenile—Fred Fischl, Chicago	13 pts.

WOMEN

Champion—Mary Maland, Minneapolis	17 pts.
220 yds.—Nancy Brown, St. Paul, Minn.	0:21.6
440 yds.—Mary Maland, Minneapolis	0:43.4
880 yds.—Jean Simon, Chicago	1:23.3
¾-mile—Mary Maland, Minneapolis	2:35.2
1 mile—Mickey Finch, New York	3:27.3
Intermediate—Mary Novak, Chicago	18 pts.
Junior—Sandra Ecklund, Minneapolis	8 pts.
Juvenile—Sandra Danielson, Minneapolis	13 pts.

United States Indoor

(At Lake Placid, N. Y.)

Champion—Steve Stenson, New York	18 pts.
440 yds.—Don Beam, Grossinger, N. Y.	0:42.5
880 yds.—Steve Stenson, New York	1:27.7
¾-mile—Steve Stenson, New York	2:15.2
1 mile—Steve Stenson, New York	3:06.3
2 miles—Kenny LeBel, Lake Placid, N. Y.	6:35.7
Intermediate—Niles Albright, Boston	12 pts.
Junior—Robert McCarthy, Brooklyn, N. Y.	10 pts.
Juvenile—Robert Fenn, New York	13 pts.

WOMEN

Champion—Jean Ashworth, Wilmington, Mass.	20 pts.
440 yds.—Jean Ashworth, Wilmington, Mass.	0:46.1
880 yds.—Jean Ashworth, Wilmington, Mass.	1:35.3
¾-mile—Jean Ashworth, Wilmington, Mass.	2:27.5
1 mile—Jean Ashworth, Wilmington, Mass.	3:18.2
Intermediate—Mary Lou Brombach, Pittsfield, Mass.	15 pts.
Junior—Gail Purdy, Glens Falls, N. Y.	9 pts.
Juvenile—Barbara Sulc, Flushing Meadow, N. Y.	12 pts.

FIGURE SKATING

U. S. Championships

(At Berkeley, Calif.)

Men—David Jenkins, Colorado Springs, Colo.	
Women—Carol Heiss, Ozone Park, N. Y.	
Pairs—Nancy Rouillard, Stoneham, Mass.—Ronald Ruddington, Roxbury, Mass.	
Dance—Sharon McKenzie-Bert Wright, Los Angeles	
Junior—Bradley Lord, Brighton, Mass.	
Women's junior—Carol Wanek, Ozone Park, N. Y.	
Junior pairs—Ila Ray and Ray Hadley, Seattle	
Junior dance—Clare O'Neill-John Bejshak, Baltimore	

GOLF

U. S. Open Championship

(At Inverness Club, Toledo, Ohio, June 13-16)

Dick Mayer, St. Petersburg, Fla.....	70	68	74	70	—282*
Cary Middlecoff, Dallas.....	71	75	68	68	—282
Jimmy Demaret, Kiamasha Lake, N. Y.....	68	73	70	72	—283
Julius Boros, Southern Pines, N. C.....	69	75	70	70	—284
Walt Burkemo, Franklin, Mich.....	74	73	72	65	—284
Fred Hawkins, El Paso, Texas.....	72	72	71	71	—286
Ken Venturi, San Francisco.....	69	71	75	71	—286
Sam Snead, White Sulphur Springs, W. Va.....	74	74	69	73	—290
Chick Harbert, Northville, Mich.....	68	79	71	72	—290
Roberto de Vicenzo, Mexico City.....	72	70	72	76	—290
Billy Maxwell, Odessa, Texas.....	70	76	72	72	—290
a—Billy Joe Patton, Morganton, N. C.....	70	68	76	76	—290

a—Amateur.

* Mayer won title in 18-hole playoff, carding a 72 to Middlecoff's 79.

Other Champions

British Open—Bobby Locke, South Africa.....	279
National P. G. A.—Lionel Hebert, Lafayette, La., defeated Dow Finsterwald, Athens, Ohio, in final... 2 and 1	
Masters—Doug Ford, Mahopac, N. Y.....	283
Eastern Open—Tommy Bolt, Los Angeles.....	276
Western Open—Doug Ford, Mahopac, N. Y.....	279*
Canadian Open—George Bayer, Los Angeles.....	271
Canadian P. G. A.—Stan Leonard, Vancouver.....	210
Tournament of Champions—Gene Littler, San Diego.....	285
World Open—Dick Mayer, St. Petersburg, Fla.....	279
All-American Open—Roberto de Vicenzo, Mexico City.....	273
French Open—Flory van Donck, Belgium.....	266
U. S. Senior Open—Fred Wood, Vancouver, B. C.....	270†

* Won title on third hole of four-way sudden death playoff.

† Won title on first hole of sudden death playoff.

Other P. G. A. Winners

Los Angeles Open—Doug Ford, Mahopac, N. Y.....	280
Bing Crosby Invitation—Jay Hebert, Lafayette, La.....	213
Caliante Open—Ed Furgol, St. Andrews, Ill.....	280*
Thunderbird Invitation—Jimmy Demaret, Kiamasha Lake, N. Y.....	273*
Imperial Valley Open—Tony Lema, Elko, Nev.....	276*
Phoenix Open—Bill Casper, Jr., Bonita, Calif.....	271
Tucson Open—Dow Finsterwald, Tequesta, Fla.....	269*
Texas Open—Jay Hebert, Lafayette, La.....	271
Houston Open—Arnold Palmer, Latrobe, Pa.....	279
Baton Rouge Open—Jimmy Demaret, Kiamasha Lake.....	278
Pensacola Open—Art Wall, Jr., Pocono Manor, Pa.....	273
St. Petersburg Open—Pete Cooper, Latrobe, Pa.....	269
Azalea Open—Arnold Palmer, Latrobe, Pa.....	282
Greensboro Open—Stan Leonard, Vancouver.....	276
Kentucky Derby Open—Bill Casper, Jr., Bonita, Calif.....	277
Colonial National—Roberto De Vicenzo, Mexico City.....	284
Arlington Hotel Open—Jimmy Demaret, Kiamasha Lake.....	276
Sam Snead Festival—Duth Harrison, St. Louis.....	266
Kansas City Open—Al Besselink, Grossinger, N. Y.....	279
Palm Beach Invitation—Sam Snead, White Sulphur Springs, W. Va.....	41 pts.
Rubber City Open—Arnold Palmer, Latrobe, Pa.....	272*
Carling Open—Paul Harney, Bolton, Mass.....	275
Labatt's Open—Paul Harney, Bolton, Mass.....	278
St. Paul Open—Ken Venturi, San Francisco.....	266
Miller High Life Open—Ken Venturi, San Francisco.....	267
Insurance City Open—Gardner Dickinson, Jr., Panama City, Fla.....	272
Dallas Open—Sam Snead, White Sulphur Springs, W. Va.....	264

* Won in playoff.

Amateur

U. S.—Hillman Robbins, Memphis, Tenn., defeated Frank (Bud) Taylor, Pomona, Calif., 5 and 4, in final	
British—Reid Jack, Scotland, defeated Harold Ridgley, United States, 2 and 1, in final	
Canadian—Nick Weslock, Windsor, Ont.	
Southern—Ed Brantly, Chattanooga, Tenn.	
Western—Ed Updegraff, Tucson, Ariz.	
Trans-Mississippi—Rex Baxter, Jr., Amarillo, Texas	
World—Don Cherry, Wichita Falls, Texas	
All-American—Don Cherry, Wichita Falls, Texas	
French—Henri de Lamaza, France	
North and South—Bill Campbell, Huntington, W. Va.	
National Collegiate—Rex Baxter, Houston	
U. S. Public Links—Don Essig, Indianapolis	
U. S. G. A. Senior—Clark Espie, Indianapolis	
U. S. Junior—Larry Beck, Kinston, N. C.	

WOMEN

U. S. Open—Betty Rawls, Spartanburg, S. C.....	299
Western Open—Patty Berg, Chicago.....	291
Titleholders—Patty Berg, Chicago.....	296
Triangle Round Robin—Fay Crocker, Uruguay.....	51 pts.
Babe Zaharias Open—Mrs. Marlene Bauer Hagge, Delray Beach, Fla.....	222
P. G. A.—Louise Suggs, Sea Island, Ga.....	285
World—Patty Berg, Chicago.....	302*
All-American—Patty Berg, Chicago.....	302

* Won title in 18-hole playoff.

Amateur

U. S.—Joanne Gunderson, Seattle, defeated Mrs. Ann Casey Johnstone, Mason City, Iowa, in final, 8 and 6	
British—Philomena Garvey, Dublin, Ireland, defeated Mrs. George Valentine, Scotland, in final, 2 and 1	
Western—Miriam Bailey, Evanston, Ill.	
Eastern—Joanne Goodwin, Haverhill, Mass.	
Southern—Clifford Ann Creed, Opelousas, La.	
North and South—Barbara McIntire, Toledo, Ohio	
Trans-Mississippi—Mrs. James Ferrie, Gardena, Calif.	
Canadian—Betty Stanhope, Edmonton, Alta.	
World—Clifford Ann Creed, Opelousas, La.	
All-American—Clifford Ann Creed, Opelousas, La.	
National Intercollegiate—Miriam Bailey, Northwestern	
U. S. Junior—Judy Eller, Old Hickory, Tenn.	

Team

Walker Cup (men amateur)—United States 8, Great Britain 3, at Minikahda Club, Minneapolis	
Ryder Cup (men pro)—Great Britain 7, United States 4, at Lindrick, England	
Derby Cup (men senior)—Great Britain 25, United States 24, Canada 4½, at Edinburgh, Scotland	
National Collegiate—Houston	

Southpaw Golfing King

Harry Shoemaker of Signal Mountain, Tenn., retained his crown in 1957 in the national left-handed golf championship. In the tournament held in Dallas, Shoemaker posted a 295, seven over par.

HORSESHOE PITCHING

World Championships

(At Murray, Utah)

Champion—Ted Allen, Boulder, Colo.	
Class B—Harry Page, Waterloo, Iowa	
Junior—Rodney Hilton, Murray, Utah	
Women—Gertsie Lou Selby, Boulder, Colo.	

TRACK AND FIELD

National A. A. U. Championships

Men's Indoor (At New York City)

60 yds.—Ira Murchison, Western Michigan	0:06.2
600 yds.—Charles Jenkins, Villanova	1:10.4
1,000 yds.—Arnold Sowell, Pittsburgh, Pa.	2:12.6
1 mile—Ron Delany, Villanova	4:07.0
3 miles—John Macy, Houston (Texas) T. C.	13:57.4
1 mile walk—Henry Laskau, 92d St. Y.M.H.A., New York	6:39.7
60-yd. high hurdles—Lee Calhoun, North Carolina College	0:07.2
Sprint medley relay (440-100-220-300)—N. Y. Pioneer Club (Frank Bowens, Dick Williams, Tom Beach, Jim Gathers)	1:53.5
1 mile relay—Villanova (Gene Maliff, John Furlinger, Al Peterson, Ed Collymore)	3:20.6
2-mile relay—Georgetown (John Bisbee, Norman Williams, John Nelson, Bob Carney)	7:39.6
High jump—Phil Reavis, Villanova	6 ft. 9½ in.
Broad jump—George Shaw, N. Y. Pioneer Club	24 ft. 9 in.
Pole vault—Bob Richards, Los Angeles A. C.	15 ft. 3 in.
Shot put—Parry O'Brien, U. S. Air Force	59 ft. 8 in.
35-lb. weight—Bob Backus, New York A. C.	63 ft. 1¼ in.
Team—Villanova	28½ pts.

Women's Indoor (At Cleveland)

50 yds.—Isabel Daniels, Tennessee State	0:05.7
100 yds.—Barbara Jones, Tennessee State	0:11.3
220 yds.—Lucinda Williams, Tennessee State	26.8
50-yd. low hurdles—Lauretta Foley, Queens Mercurettes, New York	0:07.1
440-yd. relay—Tennessee State (Lucinda Williams, Barbara Jones, Margaret Mathews, Isabel Daniels)	0:50.0
440-yd. medley relay—Tennessee State (Isabel Daniels, Barbara Jones, Alfrances Lyman, Lucinda Williams)	0:52.6
High jump—Ann Marie Flynn, German-American A. C., New York	5 ft. 2 in.
Standing broad jump—Shirley Hereford, Cleveland Recreation Division	8 ft. 8¼ in.
Shot put—Marjorie Larney, Queens Mercurettes, New York	39 ft. ½ in.
Basketball throw—Amelia Worshoven, Queens Mercurettes, New York	105 ft. 9¾ in.
Team—Tennessee State	40 pts.

Women's Outdoor (At Cleveland)

50 yds.—Barbara Jones, Tennessee State	0:06.2
100 yds.—Barbara Jones, Tennessee State	0:10.9
220 yds.—Isabel Daniels, Tennessee State	0:24.7
80-meter hurdles—Shirley Crowder, Tennessee State	0:12.4
440-yd. relay—Tennessee State	0:47.0
High jump—Verneda Thomas, Chicago Comets, Hazel Ulmer, Chicago Comets, and Neomia Rodgers, Tuskegee (tie)	4 ft. 10 in.
Broad jump—Margaret Mathews, Tennessee State	19 ft. 5½ in.
Shot put—Earlene Brown, Los Angeles	43 ft. ½ in.
Discus—Olga Connolly, Boston, Mass.	147 ft. 8 in.
Javelin—Marjorie Larney, Queens Mercurettes, New York	187 ft. 8 in.
Baseball throw—Earlene Brown, Los Angeles	271 ft. 10 in.
Team—Tennessee State	143 pts.

Men's Outdoor (At Dayton, Ohio)

100 yds.—Leamon King, California	0:09.7
220 yds.—Ollan Cassell, E. Tennessee State	0:21.0
440 yds.—Reggie Pearman, N. Y. Pioneer Club	0:46.4
880 yds.—Tom Courtney, New York A. C.	1:50.1
1 mile—Mervyn Lincoln, Australia	4:06.1
3 miles—John Macy, Houston (Texas) T. C.	13:55.0
6 miles—Doug Kyle, Hamilton (Ont.) Olympic Club	29:22.8
2-mile steeplechase—Charles Jones, Iowa	9:49.6
2-mile walk—Henry Laskau, 92d St. Y.M.H.A., New York	14:28.3
120-yd. high hurdles—Lee Calhoun, North Carolina College	0:14.2
220-yd. low hurdles—Elias Gilbert, Winston-Salem Teachers	0:22.5
440-yd. hurdles—Glenn Davis, Ohio T. C.	0:50.9
High jump—Charles Dumas, So. California Striders	6 ft. 10¼ in.
Broad jump—Ernie Shelby, Los Angeles	25 ft. 2½ in.
Hop, step and jump—Bill Sharpe, Shanahan C. C., Philadelphia	50 ft. 4¼ in.
Pole vault—Bob Richards, Los Angeles A. C.	15 ft. 1½ in.
Shot put—Bill Neider, Lawrence, Kan.	61 ft. 6½ in.
Discus—Al Oerter, New Hyde Park, N. Y.	181 ft. 6 in.
Javelin—Bob Voiles, So. California Striders	251 ft. 5½ in.
Hammer—Harold Connolly, Boston A. A.	216 ft. 3 in.
56-lb. weight—Bob Backus, New York A. C.	44 ft. 8½ in.
Team—Southern California Striders	92½ pts.

Other Men's Outdoor

Decathlon—Charles Pratt, N. Y. Pioneer Club	7,164 pts.
Pentathlon—Howard Smith, So. California Striders	3,362 pts.
All-around—Tom Pagan, New York A. C.	6,741 pts.
15,000 meters—John J. Kelley, Boston A. A.	46:36.0
20,000 meters—John J. Kelley, Boston A. A.	1:05:57.0
25,000 meters—John J. Kelley, Boston A. A.	1:27:58.2
30,000 meters—Ted Corbitt, N. Y. Pioneer Club	1:43:45.0
Marathon—John J. Kelley, Boston A. A.	2:24:55.2

RELAYS

440-yd.—N. Y. Pioneer Club (Robert Thomas, Arnold Budd, Tom Beach, Jim Gathers)	0:41.4
1 mile—N. Y. Pioneer Club (Ed Lunford, James Phipps, John Tucker, Frank Bowens)	3:14.8
1½ mile medley—Chicago T. C. (Harold Caffey, Brooks Johnson, Ted Wheeler, Phil Coleman)	7:19.3

WALKING

10,000 meters—Henry Laskau, 92d St. Y.M.H.A., New York	47:58.4
15,000 meters—John Humcke, New York A. C.	1:18:39.0
20,000 meters—Rudolph Haluza, N. Y. Pioneer Club	1:49:16.0
25,000 meters—Carl Kurr, Penn A. C., Philadelphia	2:11:46.9
30,000 meters—Leo Sjogren, Finnish-American Club, Los Angeles	2:51:10.5
35,000 meters—James Hewson, St. Francis Xavier, Buffalo, N. Y.	3:07:00.0
40,000 meters—James Hewson, St. Francis Xavier, Buffalo, N. Y.	3:49:25.0
50,000 meters—James Hewson, St. Francis Xavier, Buffalo, N. Y.	5:06:39.0

Mexicans Take Tuna Cup

Mexico won the International Tuna Cup Match at Wedgeport, Nova Scotia, in 1957. The Mexican team scored 1,221½ points.

The British Empire team, with 1,061½ points, was second and Cuba third with 651½.

NATIONAL COLLEGIATE

(At Austin, Texas)

100 yds.—Bobby Morrow, Abilene Christian	0:09.4
220 yds.—Bobby Morrow, Abilene Christian	0:21.0
440 yds.—Bob McMurray, Morgan State	0:46.8
880 yds.—Don Bowden, California	1:47.2
1 mile—Ron Delany, Villanova	4:06.5
2 miles—Charles Jones, Iowa	8:57.6
120-yd. high hurdles—Lee Calhoun, North Carolina College	0:13.6
220-yd. low hurdles—Ancil Robinson, Fresno State	0:22.2
High jump—Don Stewart, Southern Methodist, and Al Urbanckas, Illinois (tie)	6 ft. 7½ in.
Broad jump—Greg Bell, Indiana	26 ft. 7 in.
Pole vault—Bob Gutowski, Occidental	15 ft. 9¾ in.
Shot put—Dave Owen, Michigan	59 ft. 5½ in.
Discus—Al Oerter, Kansas	185 ft. 4 in.
Javelin—John Fromm, Pacific Lutheran	248 ft. 1 in.
Team—Villanova	47 pts.

INDOOR MILE WINNERS, 1957

Massachusetts K. of C.—Phil Coleman, Chicago Track Club	4:10.8
Philadelphia Inquirer—George King, New York A. C.	4:10.1
Washington Star—Bobby Seaman, U. C. L. A.	4:16.5
Metropolitan College—Ike Matza, New York University	4:20.9
Boston A. A. (Hunter)—Ron Delany, Villanova	4:07.5
Milrose (Wanamaker)—Ron Delany, Villanova	4:06.7
New York A. C. (Baxter)—Ron Delany, Villanova	4:06.8
National Interscholastic—Jim Irons, Brampton, Ont.	4:22.7
National A. A. U.—Ron Delany, Villanova	4:07.0
Atlantic Coast—Jim Beatty, North Carolina	4:16.9
Big Seven—Bernie Gay, Kansas	4:15.1
Big Ten—Charles Jones, Iowa	4:13.8
I. C. 4-A.—Burr Grim, Maryland	4:10.1
New York K. of C. (Columbian)—Ron Delany, Villanova	4:09.4
Milwaukee Journal—Ted Wheeler, Chicago Track Club	4:13.3
Heptagonal—Doug Brew, Dartmouth	4:18.9
Chicago Relays (Bankers)—Ron Delany, Villanova	4:03.8
Pioneer Club (Pegler)—George King, New York A. C.	4:19.0
Cleveland K. of C.—Ron Delany, Villanova	4:10.4

BOSTON MARATHON

(61st running)

1—Johnny Kelley, Groton, Conn.	2:20:05
2—Veikko Karvonen, Finland	2:23:54
3—Ching Woo Lim, Korea	2:24:59
4—Olavi Manninen, Finland	2:25:19
5—Soong Chil Han, Korea	2:28:14
6—Keizo Yamada, Japan	2:33:22
7—Gordon Dickson, Hamilton, Ont.	2:37:04
8—Nobuyoshi Sadanaga, Japan	2:38:13
9—Rudolfo Mendez, N. Y. Pioneer Club	2:39:45
10—Alfred Confalone, Wakefield, Mass.	2:47:51
11—Ted Corbitt, N. Y. Pioneer Club	2:49:14
12—Aldo Scandurra, Great Neck, N. Y.	2:51:35
13—John A. Kelley, Acton, Mass.	2:52:08
14—Louis H. Torres, Puerto Rico	2:54:58
15—Ted Suito, Bayside, N. Y.	2:55:45
16—John Conway, N. Y. Pioneer Club	2:56:15
17—Don Fay, Boston A. A.	2:57:13
18—Leland Chisholm, Malden, Mass.	2:58:38
19—Michael O'Hara, South Ozone Park, N. Y.	3:01:42
20—Higinio Turcio, Mexico	3:02:21

Dieckman Wins Fishing Title

John Dieckman of Costa Mesa, Calif., won the 1957 professional fresh water fishing derby at Hot Springs, Ark., with 29,006 points.

INTERCOLLEGIATE A.A.A.A. (IC4A)

Outdoor

(At New York)

100 yds.—Ed Collymore, Villanova	0:09.7
220 yds.—Ed Collymore, Villanova	0:21.0
440 yds.—Charles Jenkins, Villanova	0:47.4
880 yds.—Ron Delany, Villanova	1:49.5
1 mile—Ron Delany, Villanova	4:08.4
2 miles—Lewis Stieglitz, Connecticut	9:05.6
120-yd. high hurdles—Rod Perry, Penn State	0:14.2
220-yd. low hurdles—Rod Perry, Penn State	0:22.9
Mile relay—Manhattan (Gerald Ryan, Dennis Burbridge, Ralph Diaz, Dick Simmons)	3:13.1
High jump—Phil Reavis, Villanova	6 ft. 8 in.
Broad jump—Mike Herman, New York University	24 ft. 3½ in.
Pole vault—Don Bragg, Villanova	14 ft. 4 in.
Shot put—Ken Bantum, Manhattan	56 ft. 5 in.
Discus—John Tullar, Penn State	166 ft. 4½ in.
Javelin—Don McGorty, Manhattan	209 ft. 3½ in.
Hammer—Peter Harpel, Harvard	178 ft. 8 in.
Team—Villanova	48 pts.

Indoor

(At New York)

60 yds.—Dave Sime, Duke	0:06.2
600 yds.—Charles Jenkins, Villanova	1:12.1
1,000 yds.—Ron Delany, Villanova	2:14.0
1 mile—Burr Grim, Maryland	4:10.1
2 miles—Ron Delany, Villanova	9:06.6
60-yd. high hurdles—Lou Knight, Manhattan	0:07.2
Mile relay—Villanova (Gene Maliff, John Furlinger, Al Peterson, Ed Collymore)	3:20.6
2-mile relay—Georgetown (John Bisbee, Norm Williams, John Nelson, Robert Carney)	7:48.4
High jump—Phil Reavis, Villanova, and Charles Stead, Villanova (tie)	6 ft. 9½ in.
Broad jump—Mike Herman, New York University	23 ft. 6½ in.
Pole vault—Don Bragg, Villanova	15 ft.
Shot put—Ken Bantum, Manhattan	55 ft. 7¼ in.
35-lb. weight—George Bixby, Dartmouth	59 ft. 5¼ in.
Team—Villanova	46 pts.

MOTORCYCLING

Source: L. A. Kuchler, Assistant Secretary, American Motorcycle Association.

National Championships

5-mile track—Carroll Resweber, Milwaukee	4:31.36
10-mile track—Carroll Resweber, Milwaukee	9:31.50
25-mile track—Joe Leonard, San Jose, Calif.	18:29.92
50-mile track—Joe Leonard, San Jose, Calif.	34:36.09
100-mile road—Joe Leonard, San Jose, Calif.	1:44:12.50
200-mile road—Joe Leonard, San Jose, Calif.	2:00:49.20
Class A hillclimb, 74 cu. in. professional—Duane Nealen, Bedford, Ohio	7.83
Class A hillclimb, 45 cu. in. amateur—Charles Jacob, Wind Gap, Pa.	8.82
Class A scrambles—Bud Ekins, Los Angeles	
TT, 45 cu. in. (7 miles)—Al Gunter, Los Angeles	7:22.34
TT, 80 cu. in. (7 miles)—George Everett, Pasadena, Calif.	7:14.08

Bryan Victor in Monza 500

Jimmy Bryan of Phoenix, Ariz., triumphed in the Monza 500 at Monza, Italy, in 1957. The event was Europe's first Indianapolis type auto race. Bryan hit an average speed of 160.057 miles per hour.

TABLE TENNIS

Source: Peter W. Roberts, U. S. Table Tennis Association.

World Championships

(At Stockholm, Sweden)

Singles—Toshiaki Tanaka, Japan
 Doubles—Ivan Andreadis-Ladislav Stipek, Czechoslovakia
 Women's singles—Fujie Eguchi, Japan
 Women's doubles—L. Mosocz-A. Simon, Hungary
 Mixed doubles—Fujie Eguchi-Ichiro Ogimura, Japan
 Swaythling Cup (men's team)—Japan
 Corbillion Cup (women's team)—Japan

U. S. Open

(At South Bend, Ind.)

Singles—Bernard Bukiet, Cleveland
 Doubles—William Holzrichter, Geneva, Ill.-Norbert Van Dewalle, Chicago
 Women's singles—Mrs. Leah Neuberger, New York
 Women's doubles—Sharon Acton, Wilmington, Calif.-Valerie Smith, Los Angeles
 Mixed doubles—Leah Neuberger-Sol Schiff, New York
 Junior singles—Erwin Klein, Los Angeles
 Boys singles—Willard Stansbury, Kansas City
 Junior boys doubles—Forest Milbourn-John Krombowski, South Bend, Ind.
 Junior girls singles—Sharlene Krizman, South Bend, Ind.
 Girls singles—Jackie Koehnke, Glen Ellyn, Ill.
 Junior mixed doubles—Jackie Koehnke, Glen Ellyn, Ill.-Michael Ralston, New York
 Senior singles—Dr. Andreas Gal, Brooklyn, N. Y.
 Senior doubles—Tibor Hazi-Delany, Chevy Chase, Md.
 Esquire singles (men 50 years and over)—Bill Gunn, Mamaroneck, N. Y.

English Open

Singles—Zoltan Berczik, Hungary
 Doubles—Ichiro Ogimura-Toshiaki Tanaka, Japan
 Women's singles—Fujie Eguchi, Japan
 Women's doubles—Tomi Okawa-Taeko Namba, Japan
 Mixed doubles—Taeko Namba-Keisuke Tsunoda, Japan

SQUASH RACQUETS**United States Champions**

Open—Hashim Khan, Pakistan
 Singles—Henri R. Salaun, Boston
 Doubles—Carl Badger-Jim Ethridge, Greenwich, Conn.
 Team—Pacific Coast
 Professional—Mahmoud Abd El-kerim, Egypt
 Intercollegiate—Ben Hecksher, Harvard
 Intercollegiate team—Harvard
 Veterans—Roger Bakey, Boston
 Junior—Stephen Vehslage, Philadelphia

WOMEN

Singles—Mrs. Pepper Constable, Princeton, N. J.
 Doubles—Mrs. Donald Manly-Power-Mrs. Carter. Simonin, Philadelphia
 Senior singles—Mrs. John Carrott, Greenwich, Conn.
 Senior doubles—Anne Townsend-Mrs. Gerald Rorer, Philadelphia

Other Champions

British Open—Roshan Khan, Pakistan
 Cowles Invitation—Henri R. Salaun, Boston
 Canadian Open—Azam Khan, Pakistan
 Canadian Amateur—Henri R. Salaun, Boston
 Wolfe-Noel Cup (women)—Great Britain 5, United States 0.
 Howe Cup (women)—New York 3, Philadelphia 2.

SQUASH TENNIS

U. S. singles—James L. Porter, New York

FENCING

Source: Amateur Fencers League of America.

United States Champions

(At Milwaukee)

Foil—Dr. Daniel Bukantz, Fencers Club, New York
 Epee—Richard Berry, Salle Schmitter, Michigan
 Saber—Daniel Magay, Salle Piller, California
 Women—Janice Lee Romary, unattached, California

TEAM

Foil—Fencers Club (Daniel Bukantz, Harold Goldsmith, Nathaniel Lubell, Aubrey Seeman)
 Epee—Michigan (Richard Berry, Bernard Calkins, Raul Martinez, Rene Pinchuck)
 Saber—San Francisco (George Domolky, Daniel Magay, Thomas Orley)
 Three-weapon—Michigan (Byron Krieger, Richard Berry, William Goering)
 Women—Los Angeles (Maxine Mitchell, Janice Lee Romary, Iris Hoblit)

National Collegiate

(At Detroit)

Foil—Bruce Davis, Wayne
 Epee—James Margolis, Columbia
 Saber—Bernie Balaban, New York University
 Team—New York University

Intercollegiate Association

(At New York)

Foil—Al Peredo, New York University
 Epee—James Margolis, Columbia
 Saber—Bernie Balaban, New York University

TEAM

Foil—New York University
 Epee—Navy
 Saber—Columbia
 Three-Weapon—Navy

Women's Intercollegiates

Individual—June Johnson, Rochester Tech
 Team—Rochester Tech

RACQUETS

U. S. singles—Charles Pearson, Philadelphia
 U. S. doubles—Stanley and Charles Pearson, Philadelphia
 Tuxedo Gold Racquet—Charles Pearson, Philadelphia
 Canadian singles—Clarence C. Pell, Jr., New York
 Canadian doubles—Ned Pacaud-Jack C. Cushing, Montreal

COURT TENNIS

World—Albert Johnson, New York
 U. S. open—Albert Johnson, New York
 U. S. amateur singles—Northrup Knox, Buffalo, N. Y.
 U. S. amateur doubles—Alastair B. Martin, Glen Head, N. Y.-Northrup Knox, Buffalo, N. Y.
 Tuxedo Gold Racquet—Northrup Knox, Buffalo, N. Y.
 Intercollegiate—Roger Tuckerman, Harvard
 Intercollegiate team—Harvard

ROQUE

American Roque League

Champion—Bobby Arnold, Los Angeles
 Second Division—Karl Waterman, Elkhart, Ill.

TENNIS

Wightman Cup (women)—United States defeated England, 6 to 1, at Sewickley, Pa.

United States Champions

Singles—Malcolm Anderson, Australia (defeated Ashley Cooper, Australia, in final, 10-8, 7-5, 6-4)
 Doubles—Ashley Cooper-Neale Fraser, Australia
 Women's singles—Althea Gibson, New York City (defeated Louise Brough, Beverly Hills, Calif., in final, 6-3, 6-2)
 Women's doubles—Louise Brough, Beverly Hills, Calif.-Mrs. Margaret du Pont, Wilmington, Del.
 Mixed doubles—Althea Gibson, New York City-Kurt Nielsen, Denmark

England (Wimbledon)

Singles—Lew Hoad, Australia (defeated Ashley Cooper, Australia, in final, 6-2, 6-1, 6-2)
 Doubles—Gardner Mulloy, Denver—Budge Patty, Los Angeles
 Women's singles—Althea Gibson, New York City (defeated Darlene Hard, Montebello, Calif., in final, 6-3, 6-2)
 Women's doubles—Althea Gibson, New York City-Darlene Hard, Montebello, Calif.
 Mixed doubles—Darlene Hard, Montebello, Calif.-Mervyn Rose, Australia

France

Singles—Sven Davidsson, Sweden (defeated Herb Flam, Beverly Hills, Calif., in final, 6-3, 6-4, 6-4)
 Doubles—Ashley Cooper-Malcolm Anderson, Australia
 Women's singles—Shirley Bloomer, Great Britain (defeated Mrs. Dorothy Head Knode, Forest Hills, N. Y., in final, 6-1, 6-3)
 Women's doubles—Darlene Hard, Montebello, Calif.-Shirley Bloomer, Great Britain
 Mixed doubles—Vera Puzejova-Vladimir Javorsky, Czechoslovakia

Australia

Singles—Ashley Cooper, Australia (defeated Neale Fraser, Australia in final, 6-3, 9-11, 6-4, 6-2)
 Doubles—Lew Hoad-Neale Fraser, Australia
 Women's singles—Shirley Fry, St. Petersburg, Fla. (defeated Althea Gibson, New York City, in final, 6-3, 6-4)
 Women's doubles—Shirley Fry, St. Petersburg, Fla.-Althea Gibson, New York City
 Mixed doubles—Fay Muller-Malcolm Anderson, Australia

Other U. S. Champions

Junior singles—Alan Roberts, Brooklyn, N. Y.
 Junior doubles—Robert Delgado-Allen Fox, Los Angeles
 Boys singles—Bill Bond, LaJolla, Calif.
 Boys doubles—Bill Bond, LaJolla, Calif.-Dennis Ralston, Bakersfield, Calif.

Interscholastic singles—Earl Buchholz, John Burroughs H. S., St. Louis
 Interscholastic doubles—Ray Senkowski-Gerald Dubie, Hamtramck (Mich.) H. S.
 Interscholastic team—Hamtramck (Mich.) H. S.
 Girls singles (18 and under)—Karen Hantze, San Diego, Calif.
 Girls doubles (18 and under)—Sally Moore, Bakersfield, Calif.-Helene Weill, Beverly Hills, Calif.
 Girls singles (15 and under)—Karen Hantze, San Diego, Calif.
 Girls doubles (15 and under)—Karen Hantze-Katherine Chabot, San Diego, Calif.
 Senior singles—Bryan M. Grant, Jr., Atlanta, Ga.
 Senior doubles—Eddie Jacobs, Baltimore-C. Alphonso Smith, Arlington, Va.
 Women's senior singles—Mrs. Richard Buck, Manchester, Mass.
 Women's senior doubles—Mrs. Richard Buck, Manchester, Mass.-Mrs. Shaw McKean, Hamilton, Mass.
 Father-and-son—Harry R. Hoffman, Sr. and Jr., Philadelphia
 Public parks—Linn Rockwood, Provo, Utah

CLAY COURT

Singles—Vic Seixas, Philadelphia
 Doubles—Ashley Cooper-Neale Fraser, Australia
 Women's singles—Althea Gibson, New York City
 Women's doubles—Althea Gibson, New York City-Darlene Hard, Montebello, Calif.
 Father-and-son—Cecil and John Powless, Flora, Ill.

NATIONAL COLLEGIATE A. A.

Singles—Barry MacKay, Michigan
 Doubles—Crawford Henry-Ron Holmberg, Tulane
 Team—Michigan

NATIONAL COLLEGE GIRLS

Singles—June Stack, Western Michigan
 Doubles—June Stack, Western Michigan-Lois Sorum, Wisconsin

U. S. Indoor

Singles—Kurt Nielsen, Denmark
 Doubles—Barry MacKay, Dayton, Ohio-Grant Golden, Wilmette, Ill.
 Women's singles—Mrs. Dorothy Levine, Chicago
 Women's doubles—Mrs. Dorothy Levine-Nancy O'Connell, Chicago
 Mixed doubles—Mildred Thornton, Ormond Beach, Fla.-Don Manchester, Newton Center, Mass.
 Senior singles—Dr. Reginald Weir, New York City
 Senior doubles—Berkeley Bell, Cresskill, N. J.-Phil Hanna, Jackson Heights, N. Y.

BADMINTON

Source: Hans Rogind, National Publicity Chairman, American Badminton Association.

U. S. Champions

Singles—Finn Kobbero, Denmark
 Doubles—Finn Kobbero-Jorgen Hamnergaard, Denmark
 Women's singles—Judith Devlin, Baltimore
 Women's doubles—Judith and Sue Devlin, Baltimore
 Mixed doubles—Finn Kobbero, Denmark-Judith Devlin, Baltimore

U. S. Junior Champions

Singles—Ted Ebenkamp, California
 Doubles—Ted Ebenkamp-Don Paup, California
 Girls singles—Barbara Prince, Pennsylvania
 Girls doubles—Ardyce Carr-Virginia Green, California
 Mixed doubles—Barbara Prince, Pennsylvania-Ted Ebenkamp, California

All-England Champions

(Unofficial world championships)

Singles—Eddy Choong, Malaya
 Doubles—Joe Alston, Pasadena, Calif.-H. A. Heah, Malaya
 Women's singles—Judith Devlin, Baltimore
 Women's doubles—Mrs. K. Grandlund-Mrs. A. Hamnergaard, Denmark
 Mixed doubles—Finn Kobbero-Mrs. K. Grandlund, Denmark

Wupper Cup

(Women's international championship)

United States 6, Denmark 1, at Lytham St. Annes, England March 18.

SKIING

U. S. Championships

Time
or Pts.

ALPINE

Downhill—Bud Werner, Camp Hale S. C.....	2:30.0
Slalom—Tom Corcoran, Mt. Mansfield S. C.....	2:30.0
Giant slalom—Jan Thortensen, Washington A. C., Seattle.....	1:55.6
Combined—Tom Corcoran, Mt. Mansfield S. C.....	8.36

WOMEN

Downhill—Linda Meyers, Mammoth Mountain S. C., Calif.....	2:31.1
Slalom—Sally Deaver, Mt. Mansfield S. C.....	2:18.3
Giant slalom—Noni Foley, Sun Valley S. C.....	2:12.3
Combined—Madi Springer-Miller, Mt. Mansfield S. C.....	5.59

JUMPING

Class A—Ansten Samuelstuen, Steamboat Springs, Colo.....	223.1
Class B—Willie Erickson, Iron Mountain, Mich.....	222.1
Junior A—Jon St. Andre, Ishpeming, Mich.....	194.8
Veterans—Lloyd Severude, Eau Claire, Wis.....	191.1

CROSS COUNTRY

Class A—Sven Johansson, Aleyeska S. C., Alaska....	1:13.11
Class B—Oddvar Ask, Odin S. C., N. J.....	1:08.49

NORDIC

Combined—Bill Purcell, Western State College.....	430.7
Cross country—Walter Jackson, Western State College	240.0

North American

ALPINE

Downhill—Toni Sailer, Austria.....	2:07.3
Slalom—Christian Pravda, Sun Valley S. C.....	2:22.8
Combined—Toni Sailer, Austria.....	0.42

WOMEN

Downhill—Carla Marchelli, Italy.....	1:34.8
Slalom—Betsy Snite, Norwich, Vt.....	1:56.8
Combined—Putzi Frankl, Austria.....	.01

JUMPING

Class A—Ansten Samuelstuen, Steamboat Springs, Colo.....	210.4
Combined—Alfred Vincelette, Southern Rocky Mountain S. A.....	436.5
Class B—Butch Wedin, Iron Mountain, Mich.....	194.8
Combined—Ed Letzon, Paul Smith College.....	443.9

CROSS COUNTRY

Class A—Harold Reiber, Southern Rocky Mountain S. A.....	1:12.46
Class B—Richard Taylor, Dartmouth Outing Club....	1:14.46

National Collegiate

Skimeister—Ralph Miller, Dartmouth.....	371
Downhill—Ralph Miller, Dartmouth.....	127 sec.
Slalom—Chiharu Igaya, Dartmouth.....	104 sec.
Combined (Alpine)—Ralph Miller, Dartmouth.....	257
Cross-country—Mack Miller, Western State, Colorado	55:54.40
Jumping—Alf Vincelotte, Denver.....	217.5
Combined (Nordic)—Harold Riiber, Denver.....	437.4

TEAM

Champion—Denver.....	577.95
Downhill—Dartmouth.....	97.32
Slalom—Dartmouth.....	99.13
Combined (Alpine)—Denver.....	95.20
Cross-country—Western State, Colorado.....	97.98
Jumping—Denver.....	99.64
Combined (Nordic)—Denver.....	99.18

GYMNASTICS

National A. A. U. Championships

(At Chicago)

All-around—John Beckner, Los Angeles Turners.....	112.3
Long horse—Armando Vega, University Park, Pa.....	19.0
Calisthenics—Attila Takach, Los Angeles Turners....	19.0
Side horse—Arthur Shurlock, Midwest Gymnastic Assn.....	18.9
Still rings—Armando Vega, University Park, Pa.....	18.8
Parallel bars—Armando Vega, University Park, Pa....	19.3
Horizontal bar—Abe Grossfeld, U. of Illinois.....	19.1
Tumbling—Jeff Austin, U. S. Navy.....	9.6
Trampoline—Jeff Austin, U. S. Navy.....	9.6
Swinging rings—Tom Darling, Pittsburgh, Pa.....	9.3
Rope climb—Robert Manning, Los Angeles Turners....	3.3
Team—Los Angeles Turners.....	62%

WOMEN

All-around—Muriel Davis, Athenaeum Turners, In- dianapolis.....	75.1
Calisthenics—Muriel Davis, Athenaeum Turners, In- dianapolis.....	19.4
Side horse vaulting—Sandra Ruddick, Athenaeum Turners, Indianapolis.....	18.9
Uneven parallel bars—Sandra Ruddick, Athenaeum Turners, Indianapolis.....	18.7
Balance beam—Muriel Davis, Athenaeum Turners, Indianapolis.....	18.9
Tumbling—Barbara Galleher, Dallas A. C.....	9.4
Swinging rings—Louise Wright, Roxborough Turners	8.8

National Collegiate

(At Annapolis, Md.)

Free exercise—Norman Marks, Los Angeles State.....	27
Rope climb—Garvin Smith, Los Angeles State.....	3.1
Side horse—John Davis, Illinois.....	27
Horizontal bar—Abe Grossfeld, Illinois.....	28
Trampoline—Glenn Wilson, Western Illinois.....	28
Parallel bars—Armando Vega, Penn State.....	28
Flying rings—Tom Darling, Pittsburgh.....	28
Tumbling—Frank Halland, Illinois.....	27
All-around—Armando Vega, Penn State.....	1.60
Team—Penn State.....	88%

WATER SKIING

World Championships

Men—Joe Cash, Sarasota, Fla.
Women—Marina Doria, Switzerland
Team—United States

United States

Men—Chuck Stearns, Bellflower, Calif.
Women—Mrs. Leah Marie Atkins, Birmingham, Ala.

VOLLEYBALL

U. S. Volleyball Association

Open—Hollywood (Calif.) Y.M.C.A. Stars
Masters—Hollywood (Calif.) Comets
Intercollegiate—Florida State
Women—Santa Monica (Calif.) Mariners

North Carolina Undeclared

The University of North Carolina basketball team played 32 games without loss in the 1956-57 season. The closest call came in the final game—for the National Collegiate title—when Kansas carried the Tarheels to three overtime periods before losing by one point.

ROWING

Source: C. Leverich Brett, Editor, National Association of Amateur Oarsmen Year Book and NAAO Rowing News.

Intercollegiate Rowing Assn.

(At Syracuse, N. Y.)

VARSITY (3 miles)—1, Cornell (15:26.6); 2, Penn (15:32.6); 3, Stanford (15:39.5); 4, Princeton (15:42); 5, Syracuse (15:47.9); 6, Navy (15:56); 7, Dartmouth (16:04.4); 8, M. I. T. (16:08.2); 9, Wisconsin (16:11.3); 10, Columbia (16:19.1).

JUNIOR VARSITY (3 miles)—1, Cornell (15:46.8); 2, Syracuse (15:57.2); 3, Penn (16:02.2); 4, Navy (16:08.1); 5, Princeton (16:20.4); 6, Dartmouth (16:35.3); 7, Columbia (16:49.6).

FRESHMAN (2 miles)—1, Navy (10:25.2); 2, M. I. T. (10:28.6); 3, Cornell (10:29); 4, Rutgers (10:29.3); 5, Syracuse (10:32.8); 6, Dartmouth (10:38.7); 7, Boston University (10:43.6); 8, Princeton (10:47.2); 9, Pennsylvania (10:49.7); 10, Wisconsin (10:50.7); 11, Columbia (10:51).

Jim Ten Eyck Memorial Trophy—Cornell (18 pts.)

Eastern Assn. of Rowing Colleges

(At Princeton, N. J.—2,000 meters)

Varsity—Cornell (6:11.8)

Junior varsity—Cornell (6:20.4)

Freshman—Yale (6:30)

Rowe Cup—Cornell (19 pts.)

LIGHTWEIGHT

(At Annapolis, Md.—2,000 meters)

Varsity (Wright Cup)—Princeton (6:51.3)

Junior varsity—Navy (7:04.5)

Freshman—Navy (7:14.9)

Yale-Harvard

(At New London, Conn.)

Varsity (4 miles)—Yale (20:35)

Junior varsity—Yale (10:04.4)

Freshman—Yale (10:29)

Other Intercollegiate Regattas

Adams Cup (1 5/16 miles)—Harvard (6:25)

Blackwell Cup (1 1/4 miles)—Yale (8:54.8)

Carnegie Cup (2 miles)—Cornell (9:58.2)

Childs Cup (1 1/4 miles)—Princeton (8:56)

Compton Cup (1 1/4 miles)—Princeton (9:33.8)

Dad Vail Trophy (1 5/16 miles)—LaSalle, Philadelphia (6:43)

Florida State championship (1 5/16 miles)—Rollins (6:06.5)

Goes Trophy (2 miles)—(11:31.2)

Oxford-Cambridge (4 1/4 miles)—Cambridge (19:01)

Penn-Cornell (2 1/2 miles)—Cornell (11:55.6)

Washington-California (2 1/4 miles)—Washington (14:29.5)

SYNCHRONIZED SWIMMING

Women's National A. A. U. Champions

INDOOR

(At Lansing, Mich.)

Solo—Toni Stewart, Chicago

Duet—Judy Haga-Sandy Giltner, Lansing (Mich.) Sea Sprites

Team—Athens Water Follies, Oakland, Calif. (Lynn Pawson,

Joan Nelson, Janet Anthony, Loretta Barrious)

OUTDOOR

(At Oakland, Calif.)

Solo—Betty Vickers, Hollywood (Calif.) A. C.

Duet—Judy Haga McDonald-Sandy Giltner, East Lansing (Mich.) Sea Sprites

Team—Athens Water Follies, Oakland, Calif. (Lynn Pawson

Jackie Vargas, Loretta Barrious, Janet Anthony, JoAnn Brobst)

United States Championships

(At Philadelphia—2,000 meters except sprints)

Association singles—William H. Lang, Jr., Minnesota

B. C., St. Paul..... 8:40.8

1/4-mile dash—Walter Hoover, Jr., Detroit B. C..... 1:21.0

Quadruple sculls—Vesper B. C., Philadelphia..... 7:10.6

Intermediate eight—New York A. C..... 6:51.9

150-lb. singles—James Barker, Undine B. C., Philadelphia..... 8:37.3

150-lb. dash (1/4-mile)—James Barker, Undine B. C., Philadelphia..... 1:25.0

150-lb. doubles—Detroit B. C..... 7:51.6

150-lb. quads—Vesper B. C., Philadelphia..... 7:25.0

150-lb. fours with coxswain—West Side R. C., Buffalo, N. Y..... 7:48.8

150-lb. eights—Detroit B. C..... 6:56.8

Fours with coxswain—Detroit B. C..... 7:19.4

Pairs without coxswain—Washington A. C., Seattle... 7:46.0

Single sculls—Tom McDonough, Fairmount R. A., Philadelphia..... 8:07.6

Pairs with coxswain—Washington A. C., Seattle..... 8:25.0

Fours without coxswain—Washington A. C., Seattle... 7:08.0

Double sculls—Minnesota B. C., St. Paul..... 7:32.2

Eight-oared crews—West Side R. C., Buffalo, N. Y... 6:29.4

Team (Barnes Trophy)—Detroit B. C..... 128 1/2 pts.

National Interscholastic

(At Washington, D. C.)

Eight-oared shells (1 mile)—Washington-Lee H. S., Washington, D. C. (5:28.2)

Single sculls—Peter McCusker, Blessed Sacrament H. S., New Rochelle, N. Y. (6:21.3)

British Royal Henley

(At Henley-on-Thames, England—1 mile 550 yards)

Diamond Sculls—Stuart McKenzie, Australia (8:25)

Grand Challenge Cup (eights)—Cornell (6:53)

Thames Challenge Cup—Princeton (7:19)

Wyfords (fours)—National Provincial Bank R. C., England (7:19)

Goblets (pairs)—Tony Leadley-Christopher Davidge, England (8:17)

Double sculls—Alex Burstutov-Yuri Tjukalov, U.S.S.R. (7:41)

Royal Canadian Henley

(At Port Dalhousie, Ont.—1 mile 550 yards)

Single sculls—Tom McDonough, Fairmount R. A., Philadelphia (8:15.5—rowover)

Eight-oared shells—Vesper B. C., Philadelphia (6:28.3)

Double sculls—Vesper B. C., Philadelphia (7:57)

WATER POLO

National A. A. U. Champions

Indoors—Southern California W. P. C.

Outdoors—San Francisco Olympic Club

LeBel Retains Barrel Jumping Title

Leo LeBel, Hartford, Conn., retained his world barrel jumping on ice skates championship at the seventh annual competition at the Grossinger (N. Y.) Country Club in 1957. LeBel cleared 16 barrels for a distance of 26 feet 5 1/2 inches. Terry Browne, Detroit, was runnerup. He hurdled 15 barrels for 24 feet 2 1/2 inches. Paul Bonafe, Lauzon, Que., placed third with a leap over 14 barrels for a distance of 22 feet 11 1/4 inches.

ROLLER SKATING

A. R. S. A. CHAMPIONS

Source: United States Amateur Roller Skating Assn.

SINGLES

Senior—William Ferraro, Jr., Livonia, Mich.
 Women's senior—Nancy Galbraith, Livonia, Mich.
 Junior—Paul Zukowski, Elizabeth, N. J.
 Women's junior—Dawn Brown, Trenton, N. J.

PAIRS

Senior—Barbara Searles-William Ferraro, Jr., Livonia, Mich.
 Women's senior—Nancy Galbraith-Linda Kobane, Livonia, Mich.
 Senior dance—Madelyn Higgins-Earl Roberts, Levittown, N. Y.
 Junior—Nancy Galbraith-Thomas Kaltenbach, Livonia, Mich.
 Junior dance—Renee Warren-Jack McManus, Levittown, N. Y.

FOURS

Senior—Washington, D. C. (Sue Kalavatinos, Jack Becker, Mary Godwin, Fred Wheeler)

SPEED

Senior—Chester Brosnoki, Bayonne, N. J.
 Women's speed—Furn Walton, Washington, D. C.
 Junior—Roger Nadow, Van Nuys, Calif.
 Women's junior—Patricia Lewis, Bladensburg, Md.

RELAYS

Senior—Fred Cameron-Thomas Lucas, Alexandria, Va.
 Women's senior—Furn Walton-Mary Godwin, Washington, D. C.

RINK OPERATORS CHAMPIONS

Source: Roller Skating Rink Operators Association.

SINGLES

Senior—James Mohler, North Sacramento, Calif.
 Women's senior—Carolyn Sliger, Oklahoma City
 Intermediate—Ricky Mullican, Long Beach, Calif.
 Women's intermediate—Peggy Tipton, Long Beach, Calif.

PAIRS

Senior—Ruth Hesseman-Kenneth Trotter, Brooklyn, N. Y.
 Senior dance—Miriam Centaro-Charles Wahlig, Elmont, N. Y.
 Intermediate—Carol Stout-Robbie Wollard, Long Beach, Calif.
 Intermediate dance—Penny Money-John Beeding, Pontiac, Mich.

FOURS

Senior—Peoria, Ill. (Judy Clark, Robert Anderson, Ruth Ann Kock, Ronald Jellise)

SPEED

Senior—Charles Wahlig, Elmont, N. Y.
 Senior women—Noreen Knapp, Redondo Beach, Calif.
 Intermediate—George Gruzda, Pennel, Pa.
 Women's intermediate—Sandra Anderson, Oklahoma City

RELAYS

Senior—Wichita, Kan. (Patrick Carter, Jerry Decker, Richard Edwards, Charles Stover)
 Women's senior—Redondo Beach, Calif. (Noreen Knapp, Barbara Mann, Sharon Stevens, Glenda Wilson)
 Senior mixed—Detroit (Michele Seger, Fred Vanderhagen, Donna Waters, Edward Leineke)

FIGURES

Senior—Ronald Jellise, Peoria, Ill.
 Women's senior—Lynne Mathewson, Redwood City, Calif.
 Intermediate—Aarlyn Glenn, Long Beach, Calif.
 Women's intermediate—Paulette Stewart, Redwood City, Calif.

BOWLING

CHAMPIONS

American Bowling Congress

All-events—Jim Spalding, Louisville, Ky. 2,08
 Singles—Bob Allen, Yonkers, N. Y. 72
 Doubles—Ronald Jones-Joe Meszaros, Sterling, Ohio. 1,36
 Masters—Dick Hoover, Akron, Ohio

TEAM

All-events—Mando Photo, St. Paul, Minn. 9,45
 Open—Peter Hand Reserve Beer, Chicago. 3,12
 Booster—Rea Cress, Junction City, Kan. 2,79

Match Game Champions

(Bowling Proprietors Assn. of America)

Singles—Don Carter, St. Louis, Mo. 308.4
 Doubles—Lou Campi, Dumont, N. J.-Al Faragalli, Paterson, N. J. 9,96
 Team—Budweiser Beer, St. Louis, Mo. 11,63
 Women's singles—Marion Ladewig, Grand Rapids, Mich. 150.1
 Women's doubles—Tess Johns-Jean Schultz, Cleveland. 5,88
 Duck pin all-star—George Pelletier, Danielson, Conn. 166-1
 Singles handicap—William See, Rutledge, Mo. 92
 Team handicap—Mechanics Laundry, Indianapolis. . 3,20

Women's International Bowling Congress

All-events—Anita Cantaline, Detroit. 1,83
 Singles—Eleanor Towles, Peoria, Ill. 58
 Doubles—Nellie Vella-Jeannette Gzelak, Rockford, Ill. 1,2
 Team—Colonial Broch Co., Detroit. 2,81

DUCK PINS

CHAMPIONS

National Duck Pin Bowling Congress

All-events—Pat Crescenzi, Washington, D. C. 1,24
 Singles—Pat Crescenzi, Washington, D. C. 4
 Doubles—John Modarski-Elwood Wotton, Meriden, Conn. 8
 Team—Langley Sport Center, Washington, D. C. 1,8
 Mixed doubles—Elaine Cozza-Joe Curran, Bridgeport, Conn. 8

WOMEN

All-events—Elizabeth Barger, Baltimore. 1,1
 Singles—Marge Yeatts, Richmond, Va. 4
 Doubles—Ruth Rainey-Elizabeth Kluttz, Washington, D. C. 7
 Team—Brunswick Red Crowns, Baltimore. 1,8

BOBSLEDDING

World Championships

(At St. Moritz, Switzerland)

Two-man—Eugenio Monto-Renzo Alvera, Italy. 5:17.3
 Four-man—Switzerland (Hans Zoller, H. Theler, R. Kuderli, H. Lev). 5:11.4

North American

(At Lake Placid, N. Y.)

Two-man—John Helmer-Richard Cheverette, Lake Placid Sno Birds. 5:00.1
 Four-man—Saranac Lake Bobsled Club (Monroe Flagg, driver; Neil Rogers, Walter Stahl, James Lamy). 4:46.4

National A. A. U.

(At Lake Placid, N. Y.)

Two-man—Stan Benham-Pat Martin, Lake Placid Sno Birds. 5:10.1
 Four-man—Lake Placid Sno Birds (Stan Benham, driver; Pat Martin, Charles Pandolph, John Helmer) 4:49.7

INTERCOLLEGIATE CONFERENCE TEAM CHAMPIONS**National Collegiate Athletic Association (N. C. A. A.)**

Baseball—California
 Basketball—North Carolina
 Boxing—Idaho State
 Fencing—New York University
 Golf—Houston
 Gymnastics—Penn State

Ice Hockey—Colorado College
 Skiing—Denver
 Swimming—Michigan
 Tennis—Michigan
 Track and Field—Villanova
 Wrestling—Oklahoma

(For N. C. A. A. individual champions see index)

EASTERN COLLEGE CONFERENCE

Eastern Baseball League—Yale
 Intercollegiate Fencing Association—Three Weapon: Navy.
 Foil: New York University. Epee: Navy. Saber: Columbia.
 Eastern Golf Association—Navy
 Eastern Gymnastic League—Penn State
 Intercollegiate Rowing Association—Cornell
 Eastern Association of Rowing Colleges—Cornell
 Eastern Swimming League—Yale
 Eastern Tennis Association—Princeton
 I. C. A. A. A., track and field (indoor and outdoor)—
 Villanova
 Heptagonal Games Association, track and field—Harvard
 (indoor), Yale (outdoor)
 Metropolitan Association, track and field (indoor and out-
 door)—Manhattan
 Eastern Wrestling Association—Penn State

IVY LEAGUE

Basketball—Yale
 Fencing—Columbia
 Golf—Yale
 Hockey—Harvard
 Lacrosse—Princeton
 Squash—Princeton, Yale, Harvard (tie)
 Wrestling—Cornell

BIG TEN

Baseball—Northwestern
 Basketball—Indiana, Michigan State (tie)
 Fencing—Wisconsin
 Golf—Wisconsin
 Gymnastics—Illinois
 Swimming—Michigan State
 Tennis—Michigan
 Track (indoor and outdoor)—Indiana
 Wrestling—Minnesota

PACIFIC COAST

Baseball—California
 Basketball—California
 Golf—Oregon (Northern Division), Southern California (South-
 ern Division)
 Gymnastics—U. C. L. A. (Southern Division)
 Swimming—Oregon State (Northern Division), Stanford
 (Southern Division)
 Tennis—Washington (Northern Division), U. C. L. A., South-
 ern California, tie (Southern Division)
 Track—Southern California

ATLANTIC COAST

Baseball—Duke
 Basketball—North Carolina
 Golf—Wake Forest
 Lacrosse—Maryland
 Swimming—North Carolina
 Tennis—Maryland
 Track (indoor and outdoor)—Maryland
 Wrestling—Maryland

SOUTHWEST

Baseball—Texas
 Basketball—Southern Methodist
 Golf—Baylor
 Swimming—Southern Methodist
 Tennis—Texas
 Track—Texas

SOUTHERN

Baseball—George Washington
 Basketball—West Virginia
 Golf—George Washington
 Rifle—V. P. I.
 Swimming—V. P. I.
 Tennis—George Washington
 Track (indoor and outdoor)—William and Mary
 Wrestling—V. M. I.

SOUTHEASTERN

Baseball—Georgia Tech
 Basketball—Kentucky
 Golf—Georgia
 Swimming—Florida
 Tennis—Tulane
 Track—Louisiana State

BIG SEVEN

Baseball—Iowa State
 Basketball—Kansas
 Golf—Oklahoma
 Swimming—Oklahoma
 Tennis—Oklahoma
 Track (indoor and outdoor)—Kansas
 Wrestling—Oklahoma

MISSOURI VALLEY

Baseball—Bradley
 Basketball—St. Louis
 Golf—Houston
 Tennis—Houston
 Track—Oklahoma A. & M.

NATIONAL JUNIOR COLLEGE

Basketball—San Angelo, Texas
 Track—Victoria, Texas

RIFLE AND PISTOL SHOOTING

Source: Paul B. Cardinal, Director, Public Relations, National Rifle Association of America.

National Champions

OUTDOOR

Rifle

Smallbore—John Moschkau, Waterloo, Ia.	6392-488x
aHigh power—Ammon E. Bell, Hummelstown, Pa.	734-89v
bS/Sgt Michael Pietroforte, USMC.	738-78v
Women's smallbore—Mrs. Bertie Moore, Washington, Pa.	6370-434x
aWomen's high power—Mrs. Miralotte S. Ickes, Berkeley, Calif.	714-74v
bWomen's high power—Margaret Long, Washington, D. C.	706-51v
bCivilian high power—Martin J. Hull, Orange, Calif.	716-65v
Junior smallbore—James J. Williams, Pasadena, Calif.	6371-440x
aJunior high power—George M. Van Orden, Triangle, Va.	725-82v
bJunior high power—Margaret Long, Washington, D. C.	706-51v
aCollegiate high power—Ralph D. Lee, Rosedale, Ind.	689-60v
bCollegiate high power—Ellis Lee, Jr., Falls Church, Va.	701-58v
aNRA march rifle. bM-1 service rifle.	

Pistol

Men—1st Lt. William W. McMillan, Jr., USMC.	2612
Women—Mrs. Gertrude Backstrom, Hoquiam, Wash.	2592

NATIONAL TROPHY MATCHES

Individual rifle—T/Sgt. Paul W. Bailey, USMC.	247-27v
Team rifle—U. S. Army (Richard Hinkle, Alexander Marchioli, Charles Orr, John Roka, Willis Powell, J. B. Berry)	1440-127v
Individual pistol—M/Sgt. Huelet L. Benner, USA	293
Team pistol—U. S. Army (Huelet Benner, Nelson Lincoln, F. A. Grant, Roy Ratliff)	1136

INDOOR

Smallbore Rifle

Men—Arthur Cook, Silver Spring, Md.	791
Women—Dorothy E. Morris, Hampton, Va.	786
Junior—William Roos, Sharon, Pa.	395
Junior team—Camp Kittatinny (Bob Kampf, Ken Wood, John Ring, Dottie Yagodowski)	1556
Intercollegiate—Victor L. Polansky, Carnegie Tech.	293
Intercollegiate team—U. of California (Dave Wilson, John Ward, Frank Clasby, Fred Daulton, Jesse Frey)	1440

Pistol

Men—Lt. David Cartes, USA.	883
Women—Mrs. Gertrude Backstrom, Hoquiam, Wash.	855

DOG SHOWS

Best in Show

Westminster (New York)—Ch. Shirkhan of Grandeur, Afghan, owned by Sunny Shay and Dorothy Chenade, Hicksville, N. Y.	
Madison and Essex (Madison, N. J.)—Ch. Fircot L'Ballerine of Maryland, miniature poodle, owned by Seafren Kennels (Mr. and Mrs. Saunders Meade), Devon, Pa.	
International (Chicago)—Ch. Chik-T'Sun of Caversham, Pekingese, owned by Mr. and Mrs. C. C. Venable, Atlanta, Ga.	
Eastern (Boston)—Ch. Snowman de Beau Mar, toy poodle, owned by Mrs. L. G. Meyers, Pine Bush, N. Y.	

TRAPSHOOTING

Grand American Handicap

(At Vandalia, Ohio)

Men—Carmi Russell Crawford, Maywood, Ill.	*98
Women—Mrs. Frances King, Atlanta, Ga.	*94
Junior—Michael Baker, West Alexandria, Ohio	*96
Sub-junior—John Robert Righthouse, Marysville, Ind.	*96
Professional—R. L. Andrews, Jr., Jackson, Miss.	*93

* Won title in shoot-off.

National Championships

(At Pelham Manor, N. Y.)

Men—Walt Ostrom, Orangeburg, N. Y.	192
Women—Lynn Rader, Trumbull, Conn.	170
Handicap—Mitchell May 3d, Bronxville, N. Y.	*95
Doubles—Edward E. Bahr, Cranford, N. J.	94
Junior—Nick Egan, New York	189
Senior—W. T. Case, Livingston, N. J.	170
Family—Nick and Bernard Egan, New York	348
Overall—Dick Shaughnessy, Dedham, Mass.	371

* Won title in shoot-off.

SKEET SHOOTING

National Championships

(At Reno, Nev.)

All-around—Alex H. Kerr, Beverly Hills, Calif.	539 x 550
All gauge—John C. Dalton, Jr., Chevy Chase, Md.	250 x 250
Western open—Titus H. Harris, Jr., Galveston, Tex.	100 x 100
Eastern open—Titus H. Harris, Jr., Galveston, Tex.	100 x 100
20 gauge—Benjamin Dilorio, Jr., Los Angeles	100 x 100
Small gauge—Robert J. Thieffels, Pontiac, Mich.	99 x 100
Sub-small gauge—Ed C. L. Calhoun, Salisbury, Md	93 x 100
Champion of champions—Miner Cliett, Childersburg, Ala.	100 x 100

WOMEN

All-around—Mrs. Thelma Anguish, Pacoima, Calif.	507 x 550
All gauge—Mrs. Thelma Anguish, Pacoima, Calif.	245 x 250
20 gauge—Mrs. Thelma Anguish, Pacoima, Calif.	97 x 100
Small gauge—Judy Allen, Oakland, Calif.	95 x 100
Sub-small gauge—Lynn Rader, Trumbull, Conn.	81 x 100

ARCHERY

World Championships

(At Prague, Czechoslovakia)

Men—O. K. Smathers, United States	2,23
Women—Carole Meinhart, United States	2,120
Men's team—United States (O. K. Smathers, Joe Fries, Sylvester Chessman)	6,59
Women's team—United States (Carole Meinhart, Ann Clark, Betty Schmidt)	6,18

United States Championships

National Archery Association

(At Sacramento, Calif.)

Men—Joe Fries, Los Angeles	3,33
Women—Carole Meinhart, Pittsburgh	3,78
Intermediate boys—Jim Yoakum, Sacramento, Calif.	3,41
Intermediate girls—Kay Volkman, Dayton, Ohio	3,50
Men's crossbow—R. B. Breneman, Columbus, Ohio	2,54
Women's crossbow—Margaret Breneman, Columbus, Ohio	2,25
Men's sextuple American—Norman W. Richards, Los Angeles	4,22
Men's bare bow sextuple American—Dr. B. Matzen	3,65
Men's team—Sacramento Archers Club (Jim Yoakum, George Grimes, Herb Taylor, Bill Bingham)	2,88
Women's team—Golden Gate Archers (Ginny Thompson, Jean Hamilton, Kay Dimmick, Billie Ambers)	2,48

BOXING

World Championship Fights in 1957

Date	Title at stake	Defender	Challenger	Winner	Round	Where held
Jan. 2	Middleweight	Ray Robinson	Gene Fullmer	Fullmer	15	New York
Feb. 13	Lightweight	Joe Brown	Wallace Smith	Brown	KO 11	Miami Beach
Feb. 22	Welterweight	Carmen Basilio	Johnny Saxton	Basilio	KO 2	Cleveland
Mar. 30	Flyweight	Pascual Perez	Dai Dower	Perez	KO 1	Buenos Aires
April 1	Bantamweight	Mario D'Agata	Alphonse Halimi	Halimi	15	Paris
May 1	Middleweight	Gene Fullmer	Ray Robinson	Robinson	KO 5	Chicago
June 15	*Bantamweight	Raul Macias	Dommy Ursua	Macias	KO 11	San Francisco
June 19	Lightweight	Joe Brown	Orlando Zulueta	Brown	KO 15	Denver
June 24	Featherweight	†Cherif Hamia	†Kid Bassey	Bassey	KO 10	Paris
July 12	Flyweight	Pascual Perez	Luis Angel Jiminez	Perez	10	Buenos Aires
July 29	Heavyweight	Floyd Patterson	Tommy Jackson	Patterson	KO 10	New York
Aug. 22	Heavyweight	Floyd Patterson	Pete Rademacher	Patterson	KO 6	Seattle
Sept. 20	Light Heavyweight	Archie Moore	Tony Anthony	Moore	KO 7	Los Angeles
Sept. 23	Middleweight	Ray Robinson	Carmen Basilio	Basilio	15	New York

* Recognized by National Boxing Association. † Fought for title vacated by Sandy Saddler.

AMATEUR BOXING

National A. A. U. Championships (At Boston)

112-lb.—Albert Pell, New York
 119-lb.—Hemon Marquez, San Francisco
 125-lb.—Ruben Pizarro, New York
 132-lb.—Gene Gresham, Detroit
 139-lb.—Vincent Shomo, New York
 147-lb.—Don Hullinger, Lima, Ohio
 156-lb.—Denny Moyer, Portland, Ore.
 165-lb.—Alex Ford, Youngstown, Ohio
 178-lb.—Lindy Lindmoser, Vancouver, B. C.
 Heavyweight—Lee Williams, Boston

National Collegiate (At Pocatello, Idaho)

112-lb.—Eduardo Labastida, California Poly
 119-lb.—Dave Abeya, Idaho State
 125-lb.—Cyril Okamoto, Idaho State
 132-lb.—Dick Rall, Washington State
 139-lb.—Ron Rall, Idaho State
 147-lb.—Bill Haynes, Idaho State
 156-lb.—Jim Flood, Sacramento State
 165-lb.—Roger Rouse, Idaho State
 178-lb.—Dale Leatham, Idaho State
 Heavyweight—Hal Espy, Idaho State
 Team—Idaho State (59 pts.)
 John S. Larowe Trophy (outstanding boxer)—Roger Rouse, Idaho State

WEIGHTLIFTING

National A. A. U. Championships (At Daytona Beach, Fla.)

	Press	Snatch	C & J	Total
123-lb.—Angel Famiglietti, Panama	195	190	255	640
132-lb.—Isaac Berger, York, Pa.	240	230	290	760
148-lb.—Joe Pitman, Vero Beach, Fla.	230	235	305	770
165-lb.—Capt. Peter George, U. S. Army	270	265	350	885
181-lb.—Tommy Kono, Honolulu	310	295	365	970
198-lb.—Clyde Emrich, Chicago	290	270	350	910
Heavyweight—Norbert Schémansky, Detroit	320	290	380	990
Over 225-lb.—Dave Ashman, Santa Monica, Calif.	265	305	385	955

WRESTLING

National A. A. U. Championships (At Waynesburg, Pa.) FREE STYLE

114.5-lb.—Takashi Hirata, Hosei University, Japan
 125.5-lb.—Terry McCann, Tulsa (Okla.) Y.M.C.A.
 136.5-lb.—Masashi Kokubo, Kei University, Japan
 147.5-lb.—Tommy Evans, Tulsa (Okla.) Y.M.C.A.
 160.5-lb.—Doug Blubaugh, Tulsa (Okla.) Y.M.C.A.
 174-lb.—Meb Turner, New York A. C.
 191-lb.—Tim Woodin, East Lansing, Mich.
 Heavyweight—Bill Kerslake, Cleveland
 Team—Tulsa (Okla.) Y.M.C.A. (39 pts.)

GRECO-ROMAN

114.5-lb.—Richard Wilson, Toledo University
 125.5-lb.—Lee Allen, Multnomah A. C., Portland, Ore.
 136.5-lb.—Tom Hall, Third Army
 147.5-lb.—Frank Szecsi, Ford Wrestling Center, Dearborn, Mich.
 160.5-lb.—Khalil Taha, Ford Wrestling Center, Dearborn, Mich.
 174-lb.—Barry Billington, U. C. L. A.
 191-lb.—Robert Steckle, Kitchener (Ont.) Y.M.C.A.
 Heavyweight—Bill Kerslake, Cleveland
 Team—Ford Wrestling Center, Dearborn, Mich. (24 pts.)

National Collegiate

115-lb.—Dick Delgado, Oklahoma
 123-lb.—Ed Peery, Pittsburgh
 130-lb.—John Johnston, Penn State
 137-lb.—Joe Gatto, Lehigh
 147-lb.—Simon Roberts, Iowa
 157-lb.—Doug Blubaugh, Oklahoma A. & M.
 167-lb.—Tom Alberts, Pittsburgh
 177-lb.—Dan Hodge, Oklahoma
 191-lb.—Ron Schirf, Pittsburgh
 Heavyweight—Robert Norman, Illinois
 Team—Oklahoma (73 pts.)

JUDO

National A. A. U. Championships

130-lb.—Masaki Kumamoto, Gardena, Southern California
 150-lb.—Fred Oishi, Seinan, Southern California
 180-lb.—Juzo Kato, Seattle, Seattle, Wash.
 Unlimited—George Harris, U. S. Air Force
 Grand champion—Harris
 Team—Southern California (12 pts.)

YACHTING

Source: Bill Love, Boating Editor,
N. Y. Journal-American

Distance Racing

Annapolis to Newport (468 miles)—Harrier (41-ft. sloop), C. Raymond Hunt, Boston
Chicago to Mackinac (333 miles)—Meteor 111 (38-ft. sloop), Hank Burkard, Detroit
Miami to Nassau (180 miles)—Finisterre (38-ft. yawl), Carleton Mitchell, Annapolis, Md.
Marblehead to Halifax, N. S. (360 miles)—Galliard, Newbold Smith, Philadelphia
Newport to Santander, Spain (3,000 miles)—Carina (53½-ft. yawl), Richard S. Nye, Greenwich, Conn.
Port Huron to Mackinac (235 miles)—Dyna (yawl), Clayton Ewing, Green Bay, Wis.
St. Petersburg to Havana (284 miles)—Criollo (67-ft. yawl), Dr. Luis H. Vidana, Cuba.
Fastnet Race, British (Coves to Plymouth, 605 miles)—Carina (53½-ft. yawl), Richard S. Nye, Greenwich, Conn.
Storm Trysail (Larchmont, N. Y., around Block Island to Stamford, Conn., 200 miles)—White Water (38-ft. sloop), John U. White, Norwalk, Conn.
Southern Ocean Racing Conference—Criollo (67-ft. yawl), Dr. Luis H. Vidana, Cuba.

International

Bermuda vs. Indian Harbor Y. C., Greenwich, Conn. (Aberfeldy Trophy, Luders-16 class sloops)—Bermuda
Bermuda vs. Long Island Sound, at Bermuda (Amorita Cup, International class sloops)—Bermuda
Bermuda vs. Long Island Sound, on L. I. Sound (International class sloops)—Long Island Sound
Bermuda, Canada, United States (Edward, Prince of Wales Cup, 5.5-meter sloops)—Sabre, Ernest Fay, Houston, Texas, and Rush IV, Victor Sheronas, Philadelphia (tie)
Norway vs. Manhasset Bay (International class)—Norway
5.5-meter (Gold Cup at Hankoe, Norway)—Flame, Albert Fay, United States
6-meter (One-Ton Cup at Hankoe, Norway)—Llanoria, Magnus Konow, United States

Other Champions

North American Men's (Mallory Cup)—George O'Day, Boston
North American Junior (Sears Bowl)—John Merrifield, Pequot Y. C., Southport, Conn.
National Women's Sailing (Adams Trophy)—Mrs. Robert E. Pegel, Chicago Y. C.
National Intercollegiate Dinghy—Navy
Atlantic Class Nationals—Harry Platt, Cold Spring Harbor, N. Y.
Jet-14 Nationals—Peter Jones, Bay Head, N. J.
National One-Design Nationals—John Niland, Milwaukee
Penguin Class Internationals—Jim Carson, Metedeconk, N. J.
Rhodes Bantam Internationals—Jim Eisinger, Toledo, Ohio
Snipe World—J. M. Alonso Allende, Spain
Snipe Nationals—Fred Schenk, Newport Beach, Calif.
Snipe Nationals, Junior—Stewart Brown, Baltimore
Star Bacardi Cup—Kurash IV, Alvaro de Cardenas, Cuba
Star Cuba Cup—Kurash IV, Alvaro de Cardenas, Cuba
Star North Americans—Lowell North, San Diego, Calif.
Thistle Nationals—Jim Hendrickson, Sandusky, Ohio
Y-Flyer Internationals—Pierre deJardin, Dorval, Que.
Highlander Nationals—O. C. Bailey, Corpus Christi, Texas.
Luders-16 Internationals—Jack Vilas, Chicago
Raven Nationals—P. James Roosevelt, Oyster Bay, N. Y.
Rebel Nationals—Bruce Goldsmith, Devil's Lake, Mich.
One-Ten Nationals—Malcolm McNaught, Hingham, Mass.
Comet World—Roger Low, Atlantic Highlands, N. J.
Wood Pussy Nationals—Herb Blake, Shelter Island, N. Y.
Moth Nationals—Blair Fletcher, Collingwood, N. J.
Lightning Internationals—Bill Cox, Noroton, Conn.

CHESS

Source: American Chess Bulletin, New York.

World Champions

Men—Vassily Smyslov, U.S.S.R.
Women—Mrs. Olga Rubtsova, U.S.S.R.
Junior—William Lombardy, New York
Students team—U.S.S.R.
Women's team—U.S.S.R.

United States

Men—Arthur B. Bisguier, New York
Women—Mrs. Gisela K. Gresser, New York
Men's open—Bobby Fischer, Brooklyn, N. Y.
Women's open—Mrs. Sonja Graf Stevenson, Palm Springs, Calif.
Speed—Geza Fuster, Toronto, Canada
Amateur—Harry Lyman, Dorchester, Mass.
Junior, Bobby Fischer, Brooklyn, N. Y.
Intercollegiate team—University of Chicago

Matches and Tournaments

Belgian championship—Alberic O'Kelly de Galway, Brussels
Beverwijk (Holland) international—Alexander Matanovic, Yugoslavia
Bognor Regis (England) international—Svetozar Gligoric, Yugoslavia
British championship—Dr. Stephen Fazekas, London
Champion of champions—Hans Berliner, Washington, D. C.
Dublin international zonal—Ludek Pachman, Czechoslovakia
Hastings (England) international—Svetozar Gligoric, Yugoslavia and Bent Larsen, Denmark (tie)
Junior international team—Holland
Manhattan C. C. championship—Arthur B. Bisguier, New York
Mar del Plata international—Paul Kerres, U.S.S.R.
Marshall C. C. championship—Sidney Bernstein, Brooklyn, N. Y.
Moscow championship—David Bronstein, U.S.S.R.
New York State championship—August Rankin, New York
New Western championship—Donald Byrne, Olivet, Mich.
Reshevsky vs. Bisguier—Samuel Reshevsky, Spring Valley, N. Y.
Reshevsky vs. Donald Byrne—Samuel Reshevsky, Spring Valley, N. Y.
Rosenwald Trophy—Samuel Reshevsky, Spring Valley, N. Y.
Scottish championship—Dr. I. M. Aitken, Glasgow
Sofia (Bulgaria) international zonal—Dr. Miroslav Filip, Czechoslovakia
Soviet championship—Mikhail Tal, U.S.S.R.

POLO

Source: Lillian M. Lauria, U. S. Polo Assn.

National Champions

OUTDOOR

Open—Detroit CCC (A. D. Beveridge, Robert Beveridge, George Oliver, Harold Barry)
20-goal—Solocup, Santa Barbara, Calif. (Vic Graber, Ray Harrington, Jr., Dr. William Linfoot, Leo Hulsemann)
Inter-circuit—Tulsa (John Oxley, L. L. Linfoot, Clark Hetherington, C. R. Colee)
12-goal—Circle F, Dallas (Russell Firestone, Hugo Dalmar, Paul Barry, Jack Murphy)
Paul Butler handicap—Detroit CCC (A. D. Beveridge, Robert Beveridge, George Oliver, Harold Barry)

INDOOR

High-goal—Westchester (David Ellis, A. G. Pennell, George C. Sherman, Jr.)
Sherman Memorial tournament—Yale (George F. Weymouth, Peter Jackson, Michael Poutiatine)
Intercollegiate—Yale (George F. Weymouth, Peter Jackson, Michael Poutiatine)

HORSE RACING

The Triple Crown

(Jockeys in parentheses)

KENTUCKY DERBY, Churchill Downs, May 4, \$125,000 added, 3 year olds, 126 pounds, 1¼ miles—1, Iron Liege (Hartack); 2, Gallant Man (Shoemaker); 3, Round Table (Neves); 4, Bold Ruler (Arcaro); 5, Federal Hill (Carstens); 6, Indian Creek (Taniguchi); 7, Mister Jive (Woodhouse); 8, Better Bee (J. Adams); 9, Shan Pac (J. R. Adams).
Time—2:02 1/5. Winner, Iron Liege, owned by Calumet Farm. Winner's purse, \$107,950. Margin of victory, nose.

PREAKNESS STAKES, Pimlico, May 18, \$100,000 added, 3 year olds, 126 pounds, 1 3/16 miles—1, Bold Ruler (Arcaro); 2, Iron Liege (Hartack); 3, Inside Tract (Nelson); 4, Promised Land (Atkinson); 5, Nah Hiss (Ussery); 6, Inswept (Culmone); 7, Federal Hill (Carstens).
Time—1:56 1/5. Winner, Bold Ruler, owned by Wheatley Stable. Winner's purse, \$65,250. Margin of victory, 2 lengths.

BELMONT STAKES, Belmont Park, June 15, \$100,000 added, 3 year olds, 126 pounds, 1½ miles—1, Gallant Man (Shoemaker); 2, Inside Tract (Nelson); 3, Bold Ruler (Arcaro); 4, Pop Corn (Atkinson); 5, Lucky Dip (Anderson); Bold Nero (Choquette) eased.

Time—2:26 3/5 (U. S. record). Winner, Gallant Man, owned by Ralph Lowe, Midland, Texas. Winner's purse, \$77,300. Margin of victory, 8 lengths.

Foreign Races

Epsom Derby (England)—Crepello

Grand National (England)—Sundew

Queen's Plate (Canada)—Lyford Cate

BILLIARDS

First Loss for Lee

Edward Lee of the New York A.C. was defeated in tournament play for the first time in his career when he lost to Stanhope Adams of the Illinois A.C., 50 to 32, in the finals of the 1957 national amateur invitational three-cushion billiards championship. Lee first won the title in 1931 and has been champion 13 times.

Intercollegiate Champions

Straight rail—Billy Snowden, Texas

Three-cushion—Frank Tajima, Washington

Pocket—Joseph Sapanaro, Jr., Suffolk

Women's pocket—Judy Ferles, Arizona

TEAM

Straight rail—Suffolk

Three-cushion—Florida

Pocket—Florida

Women's pocket—Iowa

CURLING

Champions

Source: Glenn Harris, Editor and Publisher, North American Curling News, Superior, Wis.

United States—Hibbing, Minn. (Harold Lauber, skip; Louis Lauber, Peter Beasy, Matt Brklich)

Midwest U.S.—Madison, Wis. (Larry Leifer, skip; Harvey Waddell, Doc Strobel, Stretch Hogan)

Women's U.S.—Chicago Heathers (Mrs. Frank Pollen, skip; Mrs. Darwin Curtis, Mrs. Fred Nichols, Mrs. Perry Pennington)

Canadian—Edmonton, Alta. (Matt Baldwin, skip; Gordon Hayes, Art Kleinmeyer, Bill Price)

Other U. S. Stakes Winners

Race	Winner & Jockey	Win Value
American Derby—Round Table (Shoemaker).....		\$100,350
American Handicap—Find (Neves).....		32,500
Arch Ward Memorial—Hoop Band (Heckmann).....		34,400
Argonaut—Terrang (Longden).....		30,300
Arlington Classic—Clem (McCreary).....		105,950
Arlington Futurity—Leather Button (Skelly).....		97,575
Arlington Handicap—Manassas (Dodson).....		88,800
Arlington Lassie—Poly Hi (Guerin).....		65,025
Arlington Matron—Pucker Up (Shoemaker).....		34,250
Atlantic City Handicap—Royal Beacon II (Blum).....		65,000
Balmoral Turf Handicap—Sir Tribal (Skoronski).....		34,800
Bay Meadows Derby—Round Table (Neves).....		24,375
Bay Meadows Futurity—Murray Canyon (Lidberg).....		29,275
Beldame—Pucker Up (Shoemaker).....		51,200
Belmont Futurity—Jester (Bailey).....		81,005
Blue Grass—Round Table (Neves).....		19,600
Brooklyn—Portersville (Nelson).....		37,700
California Breeders—Prince Khaled (Arcaro).....		37,540
Californian—Social Climber (Shoemaker).....		70,700
Carter—Portersville (Atkinson).....		40,800
Champagne—Jewel's Reward (Shoemaker).....		84,225
Chicagoan—Better Bee (Burr).....		35,600
Coaching Club Oaks—Williamette (Choquette).....		48,800
Delaware Handicap—Princess Turia (Hartack).....		110,875
Delaware Oaks—Bayou (Hartack).....		38,100
Equipoise Mile—Swoon's Son (Erb).....		34,900
Flamingo—Bold Ruler (Arcaro).....		94,200
Florida Derby—Gen. Duke (Hartack).....		73,400
Grey Lag—Kingmaker (Ussery).....		38,800
Gulfstream Park Handicap—Bardstown (Hartack).....		76,400
Hawthorne Gold Cup—Round Table (Harmatz).....		75,950
Hialeah Turf Handicap—Jabneh (Hartack).....		78,450
Hollywood Gold Cup—Round Table (Shoemaker).....		100,000
Inglewood Handicap—Find (Neves).....		30,200
Jersey Stakes—Iron Liege (Hartack).....		44,300
Jockey Club Gold Cup—Gallant Man (Shoemaker).....		53,850
John B. Campbell Memorial—Dedicate (Boland).....		75,150
Kentucky Oaks—Lori-El (Cook).....		29,700
Lincoln Special—Paper Tiger (McCreary).....		40,500
Los Angeles—Porterhouse (Longden).....		32,700
Manhattan—Renegade (Ussery).....		37,300
Massachusetts—Greek Spy (Guerin).....		39,100
Metropolitan—Traffic Judge (Arcaro).....		44,600
Michigan Mile—My Night Out (Knapp).....		38,320
Monmouth Handicap—Dedicate (Arcaro).....		72,625
Monmouth Oaks—Romanita (Skelly).....		38,205
New Orleans—Kingmaker (Boulmetis).....		42,000
Princess Pat Stakes—Hasty Doll (Hartack).....		67,150
San Juan Capistrano—Corn Husker (Arcaro).....		69,400
Santa Anita Derby—Sir William (Moreno).....		95,500
Santa Anita Handicap—Corn Husker (Neves).....		103,600
Santa Anita Maturity—Spinney (Harmatz).....		93,870
Sapling Stakes—Plion (Shuk).....		37,945
Saratoga—Renegade (Ussery).....		40,000
Starlet Stakes—Old Pueblo (Arcaro).....		49,000
Suburban—Traffic Judge (Arcaro).....		58,450
Sunset—Find (Neves).....		66,000
Travers—Gallant Man (Shoemaker).....		29,500
United Nations—Round Table (Shoemaker).....		65,000
Warren Wright Memorial—Swoon's Son (Erb).....		31,700
Washington Park Futurity—Jewel's Reward (Hartack).....		92,050
Washington Park Handicap—Pucker Up (Shoemaker).....		80,800
Westerner—Round Table (Shoemaker).....		69,300
Widener—Bardstown (Hartack).....		82,200
William B. Kyne—Pibe Carlitos (York).....		58,900
Woodward—Dedicate (Hartack).....		70,500

CASTING

World Championships

(At Kiel, Germany)

Amateur all-around—Jon Tarantino, United States

Professional all-around—Ben Hardesty, United States

National Championships

(At Barberton, Ohio)

Source: Paul N. Jones, Executive Secretary, National Association of Angling and Casting Clubs.

All-around—Jon Tarantino, San Francisco, and Marion Garber, Toledo, Ohio (tie)

DISTANCE

	Feet
All distance—Jon Tarantino, San Francisco.....	3,314
Flies—Myron Gregory, Oakland, Calif.....	1,059
Baits—William J. Lovely, St. Louis.....	2,314
Trout fly—Myron Gregory, Oakland, Calif.....	177 2/3 av.; 186 long cast
Salmon fly—Billy Peters, Toledo, Ohio.....	178 1/3 av.; 185 long cast
¾-oz. bait—William J. Lovely, St. Louis.....	352 2/3 av.; 371 long cast
¾-oz. bait—William J. Lovely, St. Louis.....	418 2/3 av.; 426 long cast

ACCURACY

	Points
All accuracy—Marion Garber, Toledo, Ohio.....	392
Flies—Steve Aleshi, Kansas City, Mo.; Paul M. Cowan, Detroit, and George Applegren, Chicago (tie).....	199
Dry fly—George Applegren, Chicago.....	100
Wet fly—Steve Aleshi, Kansas City, Mo.....	100
Baits—Bobby Spear, Fort Worth, Texas.....	195
¾-oz. bait—Bobby Spear, Fort Worth, Texas.....	97
¾-oz. bait—Bill Wernert, St. Paul, Minn.....	99

WOMEN—ACCURACY

All accuracy—Mel Gavin, St. Louis.....	393
Flies—Mel Gavin, St. Louis.....	198
Dry fly—Mel Gavin, St. Louis.....	99
Wet fly—Ann Strobel, Minneapolis.....	100
Baits—Mel Gavin, St. Louis.....	195
¾-oz. bait—Mel Gavin, St. Louis.....	97
¾-oz. bait—Mel Gavin, St. Louis.....	98

LACROSSE

Source: Jack Kelly, The Lacrosse Newsletter, Bay Shore, N. Y.

1957 Champions

College (Wingate Trophy)—Johns Hopkins

Club—Mt. Washington, Baltimore

Open—Johns Hopkins and Mt. Washington, Baltimore (tie)

North-South Game—North 14, South 10, at Baltimore

All-America Selections

FIRST TEAM—Goal: Jim Kappler, Maryland. Defense: Ben Glyphis, Army; Doug Levick, Princeton; Walt Mitchell, Johns Hopkins. Midfield: Joe Seivold, Washington College; Ernie Betz, Maryland; Jim Brown, Syracuse. Attack: Billy Morrill, Johns Hopkins; Mickey Webster, Johns Hopkins; Jack Daut, Rutgers.

WOMEN

All-America Selections

FIRST TEAM—Goal: Gloria Heath, Westchester. Point: Gayle Meacham, Philadelphia. Cover point: Mary Fetter, Philadelphia. Third man: Barbara Hall, Boston. Defense wings: Clorinda Saragosa, Boston; Gertrude Dunn, Philadelphia. Center: Jane Oswald, Philadelphia. Attack wings: Elsie Keady, Boston; Sue Gordy, Philadelphia. Third home: Betty Schellenberger, Philadelphia. Second home: Judy Devlin, Baltimore. Home: Barbara Heylman, Philadelphia.

MOTORBOATING

Major Trophy Winners

Gold Cup—Miss Thriftway, Bill Muncey, Seattle, Wash.

President's Cup—Hawaii Kai III, Jack Regas, Livermore, Calif.

Silver Cup—Hawaii Kai III, Jack Regas, Livermore, Calif.

Governor's Cup—Hawaii Kai III, Jack Regas, Livermore, Calif.

National Champions

INBOARD

91 hydro—Sam Crooks, Madeira Beach, Fla.

7 litre—George Byers, Columbus, Ohio

266 hydro—Ray Gassner, St. Petersburg, Fla.

225 hydro—William Ritner Sr., Willow Grove, Pa.

135 hydro—Bob Hamilton, Ft. Lauderdale, Fla.

48 hydro—F. C. Moor, Miami, Fla.

280 hydro—Al Gosa, Philadelphia

136 hydro—Randy Eastburn, Newark, Del.

44 runabout—Harry Nickol, York, Pa.

B racing runabout—Ernest Rose, Patterson, Calif.

F service runabout—Forest Johnson, Miami, Fla.

E service runabout—W. E. Jones, Hampton, Va.

Cracker box—Jack Wells, North Hollywood, Calif.

Jersey speed skiff—G. Fred Rixon, Haddonfield, N. J.

P. O. D. H.—Joe Burns, Parker, Ariz.

E racing runabout—Don Campbell, Long Beach, Calif.—Ed Olson, Garden Grove, Calif. (co-owners)

OUTBOARD

M hydro—Don Whitfield, Verona, N. J.

A hydro—Mel Kirts, Mishawka, Ind.

B hydro—D. L. Christner, Quincy, Ill.

C hydro—W. L. Tenney, Crystal Bay, Minn.

C service hydro—Homer Kincaid, Carbon Cliff, Ill.

C racing runabout—Rockey Stone, Wilamina, Ore.

C service runabout—Ellis Willoughby, Springfield, Ill.

F hydro—J. B. Broadus, Lake Wales, Fla.

SOCCER

Source: Flannery News Bureau of New York.

National Challenge Cup—Kutis, St. Louis

National Amateur Cup—Kutis, St. Louis

National Junior Cup—Lighthouse Boys, Philadelphia

American League—Hakoah, New York

Lewis Cup—Polish Falcons, Elizabeth, N. J.

Eastern District League—Sons of Malta, New York

Eastern District League Cup—Sons of Malta, New York

National League—United Kingdom, New York

German-American League—New York Hungarians

British

Source: Jim Kelly, 2289 Balnbridge Ave., New York

International—England

English Cup—Ashton Villa

Scottish Cup—Falkirk

Welsh Cup—Wrexham

Irish Cup—Glenavon

LAWN BOWLING

Source: W. G. (Bill) Hay, Honorary Life President, American Lawn Bowling Association.

National Champions

Singles—R. W. Folkins, Arroyo Seco L. B. C., Los Angeles

Doubles—R. W. Folkins, Arroyo Seco L. B. C., Los Angeles

Frank D. Murray, Glendale (Calif.) L. B. C.

Triples—R. W. Folkins, D. Cameron, Arroyo Seco L. B. C., Los Angeles; Frank D. Murray, Glendale (Calif.) L. B. C.

CLOSED

Singles—Leonard Schofield, San Diego (Calif.) L. B. C.

MAJOR LEAGUE BASEBALL RECORDS FOR 1957

National League

Final Standing of the Clubs

	Milwaukee	St. Louis	Brooklyn	Cincinnati	Philadelphia	New York	Chicago	Pittsburgh	Won	Lost	Percentage	Games Behind
Milwaukee...	—	11	12	18	12	13	13	16	95	59	.617	—
St. Louis...	11	—	10	13	13	14	10	16	87	67	.565	8
Brooklyn...	10	12	—	12	9	12	17	12	84	70	.545	11
Cincinnati...	4	9	10	—	16	12	14	12	84	77	.519	15
Philadelphia...	10	9	13	6	—	15	14	13	77	74	.500	18
New York...	9	8	10	10	10	—	13	9	69	85	.448	26
Chicago...	9	12	5	7	8	9	—	12	62	92	.403	33
Pittsburgh...	6	6	10	8	9	13	10	—	62	92	.403	33

American League

Final Standing of the Clubs

	New York	Chicago	Boston	Detroit	Baltimore	Cleveland	Kansas City	Washington	Won	Lost	Percentage	Games Behind
New York...	—	14	14	12	13	13	19	13	98	56	.636	—
Chicago...	8	—	14	11	12	14	17	10	64	58	.521	8
Boston...	8	8	—	10	14	12	16	14	82	72	.532	16
Detroit...	10	11	12	—	13	11	8	13	78	76	.506	20
Baltimore...	9	10	8	9	—	9	16	15	76	76	.500	21
Cleveland...	9	8	10	11	12	—	11	15	76	77	.497	21½
Kansas City...	3	8	6	14	5	11	—	12	59	94	.386	38½
Washington...	9	5	8	9	7	10	—	55	99	.357	43	

THE LEADERS

National League

Batting—Stan Musial, St. Louis (.351); Willie Mays, New York (.333); Henry Aaron, Milwaukee (.322); Frank Robinson, Cincinnati (.322); Dick Groat, Pittsburgh (.315)

Runs batted in—Henry Aaron, Milwaukee (132); Del Ennis, St. Louis (105); Stan Musial, St. Louis (102); Ernie Banks, Chicago (102); Gil Hodges, Brooklyn (98)

Hits—Red Schoendienst, Milwaukee (200); Henry Aaron, Milwaukee (198); Frank Robinson, Cincinnati (197); Willie Mays, New York (195); Richie Ashburn, Philadelphia (186)

Doubles—Don Hoak, Cincinnati (39); Stan Musial, St. Louis (38); Ed Bouchee, Philadelphia (35); Ernie Banks, Chicago (34); Walt Moryn, Chicago (32)

Triples—Willie Mays, New York (20); Bill Virdon, Pittsburgh (11); Ed Mathews, Milwaukee (9); Bill Bruton, Milwaukee (9)

Home runs—Henry Aaron, Milwaukee (44); Ernie Banks, Chicago (43); Duke Snider, Brooklyn (40); Willie Mays, New York (35); Ed Mathews, Milwaukee (32)

Runs—Henry Aaron, Milwaukee (118); Ernie Banks, Chicago (113); Willie Mays, New York (112); Ed Mathews, Milwaukee (109); Don Blasingame, St. Louis (108)

Pitching (wins)—Warren Spahn, Milwaukee (21); Jack Sanford, Philadelphia (19); Bob Buhl, Milwaukee (18); Don Drysdale, Brooklyn (17); Lew Burdette, Milwaukee (17)

Strikeouts—Jack Sanford, Philadelphia (188); Dick Drott, Chicago (170); Moe Drabowsky, Chicago (170); Sam Jones, St. Louis (154); Don Drysdale, Brooklyn (148)

1957 ALL-STAR GAME

The American League won baseball's 24th annual All-Star Game in 1957, defeating the National League, 6 to 5, for its second victory in seven years and 14th in the series. The game was played July 9 in Busch Stadium, St. Louis.

										R.	H.	E.	
American...	0	2	0	0	0	1	0	0	3	—	6	11	0
National....	0	0	0	0	0	0	2	0	3	—	5	9	1

Batteries—Bunning, Loes (4), Wynn (7), Pierce (7), Mossi (9), Grim (9) and Berra; Simmons, Burdette (2), Sanford (6), Jackson (7), Labine (9) and Bailey. WP—Bunning. LP—Simmons. Time of game—2:43. Attendance—30,693. Receipts (gross)—\$122,027. Receipts (net)—\$104,349.62.

American League

Batting—Ted Williams, Boston (.388); Mickey Mantle, New York (.365); Gene Woodling, Cleveland (.322); Bob Boyd, Baltimore (.318); Nellie Fox, Chicago (.317)

Runs batted in—Roy Sievers, Washington (114); Vic Wertz, Cleveland (105); Frank Malzone, Boston (103); Jack Jensen, Boston (103); Minnie Minoso, Chicago (103)

Hits—Nellie Fox, Chicago (196); Frank Malzone, Boston (185); Minnie Minoso, Chicago (176); Harvey Kuenn, Detroit (173); Mickey Mantle, New York (173)

Doubles—Bill Gardner, Baltimore (36); Minnie Minoso, Chicago (36); Frank Malzone, Boston (31); Harvey Kuenn, Detroit (30); Jack Jensen, Boston (29)

Triples—Hank Bauer, New York (9); Gil McDougald, New York (9); Harry Simpson, New York (9); Bob Boyd, Baltimore (8); Nellie Fox, Chicago (8)

Home runs—Roy Sievers, Washington (42); Ted Williams, Boston (38); Mickey Mantle, New York (34); Vic Wertz, Cleveland (28); Gus Zernial, Kansas City (27)

Runs—Mickey Mantle, New York (120); Nellie Fox, Chicago (110); Jim Piersall, Boston (103); Roy Sievers, Washington (99); Ted Williams, Boston (96); Minnie Minoso, Chicago (96)

Pitching (wins)—Jim Bunning, Detroit (20); Bill Pierce, Chicago (20); Tom Sturdivant, New York (16); Dick Donovan, Chicago (16); Tom Brewer, Boston (16)

Strikeouts—Early Wynn, Cleveland (184); Jim Bunning, Detroit (182); Connie Johnson, Baltimore (177); Bill Pierce, Chicago (171); Bob Turley, New York (152)

Musial Breaks NL Record

Stan Musial of the St. Louis Cardinals set a National League record in 1957 for consecutive games played. His string of 895 surpassed the old mark of 822 set by Gus Suhr of the Pittsburgh Pirates in the years 1931 to 1937. The late Lou Gehrig of the New York Yankees created the major league record of 2,130 games.

One No-Hitter in '57

Bob Keegan of the Chicago White Sox pitched the only major league no-hit game in 1957. The 36-year-old righthander turned back the Washington Senators, 6 to 0, in the second game of a twilight-night doubleheader at Chicago on Aug. 20.

Batting Averages

(Unofficial—200 at bats or more)

National League

g ab r h hr rbi avg

Musial, St. Louis.....	134	502	82	176	29	102	.351
Mays, New York.....	156	585	112	195	35	97	.333
Aaron, Milwaukee.....	151	615	118	198	44	132	.322
Robinson, Cincinnati.....	150	611	97	197	29	76	.322
Cunningham, St. Louis.....	122	261	50	83	9	52	.318
Groat, Pittsburgh.....	125	501	58	158	7	54	.315
Fondy, Chi.-Pitts.....	106	374	45	117	2	37	.313
Schoendienst, N. Y.-Milw.....	150	648	81	200	15	65	.309
Furillo, Brooklyn.....	119	394	61	121	12	66	.307
Skinner, Pittsburgh.....	126	387	58	118	13	45	.305
Hodges, Brooklyn.....	150	579	94	173	27	98	.299
Long, Pitts.-Chi.....	130	419	55	125	21	67	.298
Ashburn, Philadelphia.....	156	626	93	186	0	33	.297
Moon, St. Louis.....	142	516	86	152	24	73	.295
Bouchee, Philadelphia.....	154	574	78	168	17	76	.293
Cimoli, Brooklyn.....	142	532	88	156	10	57	.293
Hoak, Cincinnati.....	149	529	78	155	19	59	.293
Mathews, Milwaukee.....	148	572	103	167	32	94	.292
Bell, Cincinnati.....	121	610	65	149	13	61	.292
Thomas, Pittsburgh.....	151	594	72	172	23	89	.290
Dark, St. Louis.....	140	583	80	169	4	64	.290
Moryn, Chicago.....	149	567	76	164	19	88	.289
Jablonski, New York.....	107	305	37	88	9	57	.289
Adcock, Milwaukee.....	85	209	31	60	12	38	.287
Ennis, St. Louis.....	136	490	61	140	24	105	.286
Banks, Chicago.....	156	594	113	169	43	102	.285
Temple, Cincinnati.....	96	328	55	158	0	23	.284
Covington, Milwaukee.....	148	526	69	149	8	54	.283
Mazeroski, Pittsburgh.....	114	346	44	98	6	31	.283
Freese, Pittsburgh.....	90	205	30	58	14	39	.283
Burgess, Cincinnati.....	117	387	47	108	9	48	.279
H. Smith, St. Louis.....	100	333	25	93	2	37	.279
Bruton, Milwaukee.....	79	306	41	85	5	30	.278
Amoros, Brooklyn.....	105	238	40	65	7	26	.277
Parko, Milwaukee.....	83	220	32	61	8	27	.277
Snider, Brooklyn.....	139	508	33	139	44	92	.274
Dolger, Chicago.....	118	474	28	5	29	44	.274
Logan, Milwaukee.....	129	494	95	135	10	49	.273
Kasko, St. Louis.....	134	479	59	131	1	35	.273
McMillan, Cincinnati.....	151	448	50	122	1	55	.272
Torre, Milwaukee.....	129	364	46	99	5	40	.272
Blasingame, St. Louis.....	154	650	108	176	8	58	.271
Crowe, Cincinnati.....	133	494	71	134	31	92	.271
Neal, Brooklyn.....	128	448	62	121	12	61	.270
Folles, Pittsburgh.....	109	281	32	76	9	36	.270
Anderson, Philadelphia.....	118	400	53	107	17	61	.268
Bowman, Philadelphia.....	97	237	31	63	6	26	.266
Boyer, St. Louis.....	142	544	79	144	19	62	.265
Baker, Chi.-Pitts.....	123	409	40	108	3	47	.264
Fernandez, Philadelphia.....	149	499	42	131	5	61	.263
Bailey, Cincinnati.....	123	391	54	102	20	48	.261
Repulski, Philadelphia.....	134	515	65	134	20	68	.260
Sauer, New York.....	127	378	46	98	26	76	.259
Mueller, New York.....	135	450	45	116	6	37	.258
O'Connell, Milw.-N. Y.....	143	546	86	140	8	36	.256
Norman, Chicago.....	122	415	37	105	10	35	.255
Clemente, Pittsburgh.....	118	451	42	114	4	30	.253
Crandall, Milwaukee.....	118	383	45	97	15	46	.253
Virdon, Pittsburgh.....	144	561	59	141	8	50	.251
Gilliam, Brooklyn.....	149	617	89	154	2	37	.250
Thomas, New York.....	88	240	30	60	6	31	.250
Spencer, New York.....	148	534	66	133	11	49	.249
Lockman, New York.....	133	456	50	113	7	30	.248
Post, Cincinnati.....	134	467	68	114	20	74	.244
Landrith, St. Louis.....	75	214	18	52	3	28	.243
Campanella, Brooklyn.....	103	330	31	80	13	62	.242
Thomson, Milw.-N. Y.....	122	363	39	87	12	61	.240
Harris, New York.....	89	225	28	54	9	31	.240
Lopata, Philadelphia.....	116	388	50	92	18	67	.237
Walls, Pitts.-Chi.....	125	388	45	92	6	33	.237
Virgil, New York.....	96	226	26	53	4	24	.235
Speake, Chicago.....	129	418	65	97	16	50	.232
Hamner, Philadelphia.....	133	502	59	114	10	62	.227
Reese, Brooklyn.....	103	330	33	74	1	29	.224
Zimmer, Brooklyn.....	84	269	33	59	6	19	.219
Jones, Philadelphia.....	133	440	58	96	9	47	.218
Morgan, Chicago.....	127	425	41	88	5	28	.207

American League

g ab r h hr rbi avg

Williams, Boston.....	132	420	96	163	38	87	.388
Mantle, New York.....	144	474	120	173	34	94	.365
Woodling, Cleveland.....	133	429	74	138	19	78	.322
Boyd, Baltimore.....	141	485	73	154	4	34	.318
Fox, Chicago.....	155	619	110	196	6	61	.317
Minoso, Chicago.....	122	457	55	139	17	87	.304
Skowron, New York.....	107	360	41	109	13	41	.303
Smith, Kansas City.....	152	572	99	172	43	114	.301
Sievers, Washington.....	127	431	55	128	3	39	.297
Kubek, New York.....	99	310	28	92	9	44	.297
Kell, Baltimore.....	149	577	83	170	23	90	.295
Kalhe, Detroit.....	91	279	34	82	3	32	.294
Goodman, Bost.-Balt.....	153	634	82	185	15	103	.292
Malzone, Boston.....	121	391	51	114	11	35	.292
Lopez, Kansas City.....	87	244	24	71	2	25	.291
Philey, Chi.-Det.....	141	539	87	156	13	62	.289
McDougald, New York.....	119	416	57	120	14	80	.288
Doby, Chicago.....	116	301	58	86	8	51	.286
Torgeson, Det.-Chi.....	135	518	59	147	17	64	.284
Lemon, Washington.....	144	515	84	145	28	105	.282
Wertz, Cleveland.....	145	544	82	153	23	103	.281
Jensen, Boston.....	142	407	52	113	9	49	.278
Pilarcik, Baltimore.....	151	624	74	173	9	44	.277
Kuenn, Detroit.....	137	492	75	163	24	82	.276
Maxwell, Detroit.....	129	445	82	143	13	41	.276
Nieman, Baltimore.....	125	392	36	108	8	56	.276
Carrasquel, Cleveland.....	97	295	28	81	4	28	.275
Bertoia, Detroit.....	129	462	48	126	12	65	.273
Boone, Detroit.....	124	345	35	94	11	44	.272
Cerv, Kansas City.....	125	403	51	109	13	63	.270
Simpson, K. C.-N. Y.....	121	393	38	106	7	42	.270
Phillips, Chicago.....	85	223	23	60	2	28	.270
Mauch, Boston.....	129	463	60	124	5	48	.268
Avila, Cleveland.....	104	329	51	88	1	26	.267
Plews, Washington.....	91	232	33	62	27	26	.267
Howard, New York.....	77	247	30	65	4	35	.263
Schult, Washington.....	154	644	78	169	6	55	.262
Gardner, Baltimore.....	99	263	24	69	7	36	.262
Berberet, Washington.....	151	609	103	159	19	63	.261
Piersall, Boston.....	114	372	49	97	7	34	.261
Williams, Balt.-Cleve.....	96	245	39	64	2	16	.261
Raines, Cleveland.....	146	576	72	149	15	40	.259
Bolling, Detroit.....	137	479	71	124	18	64	.259
Bauer, New York.....	129	467	48	121	14	43	.259
Power, Kansas City.....	106	348	41	90	7	36	.259
House, Detroit.....	143	575	82	143	13	41	.257
Apalicio, Chicago.....	101	350	33	90	11	70	.257
Lollar, Chicago.....	106	303	37	78	5	27	.257
Usher, Cleve.-Wash.....	125	402	51	103	14	51	.256
Rivera, Chicago.....	97	305	36	78	0	29	.256
Richardson, New York.....	93	223	24	57	13	49	.256
Dropo, Chicago.....	85	247	30	63	6	33	.255
Carey, New York.....	129	418	44	106	19	72	.254
Triandos, Baltimore.....	96	209	24	53	5	34	.254
Slaughter, New York.....	110	356	33	90	8	44	.253
Howard, New York.....	126	475	33	120	0	44	.252
Klaus, Boston.....	134	661	66	116	25	84	.252
Colavito, Cleveland.....	134	482	74	121	24	83	.251
Berra, New York.....	133	451	49	113	5	47	.251
Tuttle, Detroit.....	110	414	47	104	9	38	.251
Yost, Washington.....	116	410	45	103	10	39	.251
Martin, N. Y.-K. C.....	135	507	79	125	11	49	.247
Smith, Cleveland.....	135	461	44	113	9	33	.245
De Maestri, Kansas City.....	119	376	34	92	18	44	.245
Skizas, Kansas City.....	93	327	48	79	20	49	.242
Held, N. Y.-K. C.....	102	277	36	65	7	39	.241
Vernon, Boston.....	75	232	24	56	2	23	.241
Lepcio, Boston.....	116	382	40	86	6	28	.238
Busby, Cleve.-Balt.....	99	316	45	75	14	59	.237
Gernert, Boston.....	131	437	56	102	27	69	.236
Zernial, Kansas City.....	116	358	61	84	14	51	.235
Maris, Cleveland.....	89	201	21	47	1	19	.234
Strickland, Cleveland.....	97	279	35	65	7	38	.233
Francona, Baltimore.....	134	473	53	109	2	35	.230
Runnels, Washington.....	120	391	40	89	3	47	.228
Bolling, Bost.-Wash.....	93	280	30	63	4	19	.225
White, Boston.....	91	340	24	74	3	31	.218
Landis, Chicago.....	96	274	39	58	2	16	.212
Thompson, Kansas City.....	81	230	25	47	7	19	.204
Miranda, Baltimore.....	115	315	30	61	0	20	.194
Hunter, Kansas City.....	116	319	39	61	8	29	.191

CLUB BATTING

ab r h hr rbi sb avg

St. Louis.....	5472	737	1497	132	685	58	.274
Milwaukee.....	5461	772	1469	199	722	35	.269
Cincinnati.....	5389	747	1452	187	714	51	.269
Pittsburgh.....	5403	586	1447	92	551	46	.268
Brooklyn.....	5241	690	1325	147	648	58	.253
New York.....	5344	643	1349	157	610	63	.252
Philadelphia.....	5239	623	1311	117	568	65	.250
Chicago.....	5369	628	1312	147	591	28	.244

ab r h hr rbi sb avg

New York.....	5267	723	1412	145	680	49	.268
Boston.....	5268	721	1380	153	696	29	.262
Chicago.....	5265	707	1369	108	671	108	.260
Detroit.....	5350	614	1376	116	675	36	.257
Baltimore.....	5259	597	1326	87	556	57	.252
Cleveland.....	5170	682	1304	140	648	37	.252
Washington.....	5230	603	1274	111	571	12	.244
Kansas City.....	5160	565	1261	166	626	33	.244

PITCHING RECORDS (Unofficial—100 innings or more)

National League

	g	ip	h	bb	so	w	l	era
Podres, Brooklyn.....	31	196	168	44	108	12	9	2.66
Spahn, Milwaukee.....	39	271	241	78	109	21	11	2.69
Szasz, Brooklyn.....	34	221	197	61	148	17	9	2.69
Buhl, Milwaukee.....	31	173	171	121	117	18	7	2.69
Law, Pittsburgh.....	39	101	94	33	56	10	8	2.86
Maglie, Brooklyn.....	31	173	171	26	49	6	6	2.94
Sanford, Philadelphia.....	33	237	194	93	188	19	8	3.08
Conley, Milwaukee.....	35	148	133	64	61	9	9	3.16
McDevitt, Brooklyn.....	22	119	105	72	90	7	4	3.25
Friend, Pittsburgh.....	40	277	273	68	144	14	8	3.38
Labine, Brooklyn.....	68	105	104	27	67	5	7	3.43
Simmmons, Philadelphia.....	32	212	214	51	94	12	11	3.44
Barclay, New York.....	37	183	196	48	60	9	9	3.44
Jackson, St. Louis.....	41	210	195	57	98	15	9	3.47
L. McDaniel, St. Louis.....	30	192	196	53	75	15	9	3.47
Newcombe, Brooklyn.....	28	199	198	33	90	11	12	3.48
Lawrence, Cincinnati.....	49	250	234	77	119	16	13	3.53
Drabowsky, Chicago.....	36	240	214	94	170	13	15	3.53
Jones, St. Louis.....	28	183	163	71	154	12	9	3.59
Elston, Bklyn.-Chi.....	40	145	140	55	102	6	7	3.60
Drott, Chicago.....	30	229	200	129	170	15	11	3.62
Miller, New York.....	32	126	118	52	75	7	5	3.64
Trowbridge, Milwaukee.....	37	257	260	59	78	17	9	3.71
Burdette, Milwaukee.....	40	212	228	67	110	12	18	3.78
Antonelli, New York.....	33	149	136	55	83	8	10	3.81
Mizell, St. Louis.....	43	180	194	38	50	11	14	3.85
Purkey, Pittsburgh.....	38	238	233	71	93	15	13	3.86
Gomez, New York.....	33	104	83	51	122	5	4	3.89
Kline, Pittsburgh.....	39	250	246	43	128	9	16	4.00
Roberts, Philadelphia.....	27	171	176	39	134	10	13	4.11
Haddix, Philadelphia.....	55	158	140	56	88	8	11	4.22
Worthington, New York.....	36	165	165	54	91	10	7	4.31
Wehmeler, St. Louis.....	43	148	152	33	67	7	9	4.32
Gross, Cincinnati.....	36	163	185	65	70	7	9	4.36
Crone, Milw.-N. Y.....	32	203	115	37	52	6	11	4.37
Hillman, Chicago.....	31	205	211	66	103	6	16	4.39
Rush, Chicago.....	39	174	191	55	99	10	10	4.56
Nuxhall, Cincinnati.....	37	207	236	46	106	12	13	4.67
Arroyo, Pittsburgh.....	54	313	251	32	101	31	11	4.60
Craig, Brooklyn.....	32	111	101	47	66	6	9	4.62
Hacker, Cin.-Phila.....	35	117	122	31	50	7	6	4.77
Schmidt, St. Louis.....	40	117	146	49	63	10	3	4.77
Cardwell, Philadelphia.....	30	128	122	43	91	4	8	4.92
Acker, Cincinnati.....	49	109	122	42	65	10	5	5.04
Kilppstein, Cincinnati.....	46	146	146	68	98	8	11	5.05

American League

	g	ip	h	bb	so	w	l	era
Staley, Chicago.....	47	105	95	28	43	5	1	2.14
Shantz, New York.....	30	173	158	40	71	11	6	2.45
Sturdivant, New York.....	28	203	170	80	117	16	6	2.53
Zuvelink, Baltimore.....	56	113	105	40	36	10	6	2.55
Ford, New York.....	24	129	115	53	85	11	5	2.58
McLish, Cleveland.....	42	144	117	67	88	9	7	2.63
Burnings, Detroit.....	45	267	214	72	182	20	8	2.70
O'Dell, Baltimore.....	35	140	107	39	95	4	10	2.70
Turley, New York.....	31	240	206	48	152	13	6	2.71
Sullivan, Boston.....	31	240	206	48	152	13	6	2.71
Donovan, Chicago.....	28	221	203	45	88	16	6	2.77
Trucks, Kansas City.....	48	117	107	62	54	9	7	3.00
Foytack, Detroit.....	38	212	175	104	118	14	11	3.14
Narleski, Cleveland.....	46	154	136	71	93	11	5	3.16
Lee, Baltimore.....	31	156	142	37	86	12	7	3.17
Johnson, Baltimore.....	35	242	210	65	177	14	11	3.20
Pierce, Chicago.....	37	257	228	72	177	20	12	3.26
Ditmar, New York.....	46	127	128	37	62	8	3	3.26
Maas, Detroit.....	45	219	210	65	116	10	14	3.29
Terry, N. Y.-K. C.....	28	151	138	55	86	5	12	3.34
Urban, Kansas City.....	31	129	110	45	55	7	4	3.35
Hoelt, Detroit.....	34	207	188	69	111	9	11	3.43
Hilson, Chicago.....	30	202	189	66	100	15	8	3.48
Fischer, Chicago.....	33	124	140	34	47	7	8	3.48
Keegan, Chicago.....	30	144	131	37	40	8	10	3.50
Garcia, Cleveland.....	38	221	221	73	108	12	8	3.58
Kucks, New York.....	37	179	169	69	79	8	10	3.62
Wight, Baltimore.....	27	121	122	54	50	6	6	3.64
Fornieles, Balt.-Bost.....	40	182	192	55	107	10	13	3.66
Nixon, Boston.....	29	192	207	66	96	12	13	3.70
Moore, Baltimore.....	34	228	195	111	116	11	13	3.71
Larson, New York.....	27	140	113	87	79	10	4	3.73
Garver, Kansas City.....	24	145	120	55	60	9	13	3.85
Gorman, Kansas City.....	38	124	126	33	64	6	9	3.85
Brewer, Boston.....	32	238	226	93	128	16	13	3.88
Brown, Baltimore.....	25	150	133	38	61	7	8	3.90
Portocarrero, K. C.....	33	115	103	34	41	4	9	3.91
Lary, Detroit.....	40	238	250	72	107	11	16	4.01
Porterfield, Boston.....	28	102	107	29	28	4	4	4.06
Pasoual, Washington.....	21	176	169	79	114	8	17	4.09
Harshman, Chicago.....	30	151	142	82	82	8	8	4.11
Mossi, Cleveland.....	36	159	165	57	97	11	10	4.13
Hyde, Washington.....	52	109	104	55	44	4	3	4.13
Clevenger, Washington.....	52	140	138	47	77	7	6	4.18
Kellner, Kansas City.....	28	133	141	40	71	6	5	4.26
Wynn, Cleveland.....	40	284	270	104	184	14	17	4.30
Burnette, Kansas City.....	38	113	114	44	57	7	12	4.30
Lemon, Cleveland.....	21	117	129	64	45	6	11	4.62
Morgan, Kansas City.....	46	143	160	64	32	9	7	4.66
Sisler, Boston.....	22	122	135	61	55	7	8	4.72
Ramos, Washington.....	43	231	251	71	90	12	16	4.79
Kemmerer, Bost.-Wash.....	40	176	219	70	79	7	11	4.96
Stobbs, Washington.....	42	212	234	80	114	8	20	5.35

CYCLING

World Championships

(At Liege and Waregem, Belgium)

Professional

Road—Rik Van Steenberghe, Belgium
Sprint—Jan Derksen, Holland
Pursuit—Roger Riviere, France
Motor-paced—Paul DePaepe, Belgium

Amateur

Road—Louis Proost, Belgium
Sprint—Michel Rosseau, France
Pursuit—Carlo Simonigh, Italy

United States Amateur

(At Kenosha, Wis.)

Open—Jack Disney, Altadena, Calif.
Mile—Jack Disney, Altadena, Calif.
2-mile—Jack Disney, Altadena, Calif.
5-mile—Jack Disney, Altadena, Calif.
10-mile—Robert Tetzlaff, Hollywood, Calif.
Women's open—Nancy Neimann, Detroit

Tour de France

(22 stages—2,911 miles)

h m s

1—Jacques Anquetil, France..... 135:44:22
2—Marcel Janssens, Belgium..... 135:59:38
3—Adolf Christian, Switzerland..... 136:02:02
4—Jean Forrester, France..... 136:02:44
5—Jesus Loroño, Spain..... 136:04:59
Team—France

CANOEING

Source: Walter Haner, Jr., Secretary, National Paddling Committee, American Canoe Association.

National Paddling Championships

1-man single—Frank Havens, Washington C. C.
Tandem single—R. Moran-A. Demus, Samoset C. C.
4-man single—Yonkers C. C. (S. Messur, A. Sprongel, A. Geraty, D. Kelley)
1-man double—Dave Merwin, Turkeyfoot K. C.
Tandem double—Ken Wilson-R. O'Brien, Inwood C. C.
4-man double—Potomac B. C. (K. Clark, W. Haase, W. Schuette, T. Horton)
Team—Yonkers C. C. (28 pts.)

North American Championships

1-man single—Norm Lane, Canada
Tandem single—Bill Collins-Frank Sullivan, Canada
4-man single—Canada (E. Brady, Smooison, J. Hamilton, D. Duffy)
1-man double—Bob Smith, Canada
Tandem double—Wally Harris-Les Melie, Canada
4-man double—United States (S. Messur, G. Anderson, R. Dermond, A. Geraty)
Team—Canada (36 pts.)

Other U. S. Champions

Decked sailing—Joseph Farrugia, Forest Hills, N. Y.
Cruising sailing—Roger Wilkinson, Larchmont, N. Y.
Class C sailing—Nathan L. Mallison, Seminole C. C.

1957 WORLD SERIES

Milwaukee Braves (N.L.) defeated New York Yankees (A.L.), 4 games to 3

1st Game—at New York, Wed., Oct. 2

MILWAUKEE (N)				NEW YORK (A)			
	ab	r	h		ab	r	h
Schoendienst, 2b	4	0	1	Bauer, rf	4	0	1
Logan, ss	3	0	0	McDougald, ss	4	0	1
Mathews, 3b	2	0	0	Mantle, cf	4	0	2
Aaron, cf	4	0	1	Skowron, 1b	1	0	0
Adcock, 1b	4	0	0	Howard, 1b	2	1	1
Torre, 1b	0	0	0	Collins, 1b	1	0	0
Pafko, rf	4	0	0	Berra, c	3	1	1
Covington, lf	4	1	2	Carey, 3b	3	0	1
Crandall, c	4	0	1	Coleman, 2b	3	1	2
Spahn, p	1	0	0	Kubek, lf	3	0	0
Johnson, p	0	0	0	Ford, p	3	0	0
aJones	1	0	0				
McMahon, p	0	0	0	Totals	31	3	9
Totals	31	1	5				

aGrounded out for Johnson in 7th.

Milwaukee	0	0	0	0	0	1	0	0-1
New York	0	0	0	1	2	0	0	x-3

E—Howard. RBI—Bauer, Carey, Coleman, Schoendienst. 2B—Coleman, Bauer, Covington. S—Coleman. DP—McDougald-Coleman-Howard; Crandall-Logan. LOB—Milwaukee 7, New York 7. BB, off—Ford 4 (Mathews 2, Spahn, Logan), Spahn 1 (Berra), McMahon 1 (Carey). SO, by—Ford 5 (Covington 2, Aaron, Pafko, Logan), Johnson 1 (Kubek), McMahon 3 (Bauer, McDougald, Collins). H, off—Spahn 7 in 5 1/3 innings, Johnson 0 in 2/3, McMahon 2 in 2. R&ER, off—Spahn 3-3, Ford 1-1. LP—Spahn.

Umpires—Paparella (A), plate; Conlan (N), 1b; McKinley (A), 2b; Donatelli (N), 3b; Secory (N)—Chylak (A), foul lines. Time—2:10. Paid attendance—69,476. Net receipts—\$426,346.72.

3d Game—at Milwaukee, Sat., Oct. 5

NEW YORK (A)				MILWAUKEE (N)			
	ab	r	h		ab	r	h
Bauer, rf	5	1	1	Schoendienst, 2b	5	0	3
Kubek, lf	5	3	3	Logan, ss	4	1	2
Mantle, cf	3	2	2	Mathews, 3b	2	0	0
Berra, c	4	2	1	Aaron, cf	5	1	2
McDougald, ss	1	2	0	Covington, lf	3	0	0
Simpson, 1b	1	0	1	Adcock, 1b	3	0	0
Howard, 1b	2	0	0	Trowbridge, p	0	0	0
Collins, 1b	1	0	0	dJones	0	0	0
Lumpe, 3b	5	0	1	McMahon, p	0	0	0
Coleman, 2b	4	1	0	fPafko	0	0	0
Turley, p	1	0	0	Hazle, rf	4	1	0
Larsen, p	2	1	0	Rice, c	3	0	1
Totals	34	12	9	eDemeritt	0	0	0
				Crandall, c	1	0	0
				Buhl, p	0	0	0
				Pizarro, p	1	0	0
				Conley, p	0	0	0
				bSwatski	1	0	0
				Johnson, p	0	0	0
				cTorre, 1b	2	0	0
				Totals	35	3	8

aWalked for Simpson in 3d. bStruck out for Conley in 4th. cGrounded out for Johnson in 6th. dGrounded out for Trowbridge in 7th. eRan for Rice in 8th. fHit by pitch for McMahon in 9th.

New York	3	0	2	2	0	0	5	0	0-12
Milwaukee	0	1	0	2	0	0	0	0	0-3

E—Buhl. RBI—Kubek 4, McDougald, Simpson, Lumpe 2, Mantle 2, Bauer 2, Schoendienst, Aaron 2. HR—Kubek 2, Mantle, Aaron. SB—McDougald. SF—McDougald. DP—Schoendienst-Torre. LOB—New York 7, Milwaukee 14. BB, off—Buhl 2 (Mantle, Berra), Pizarro 2 (Bauer, Howard), Conley 1 (McDougald), Johnson 1 (Mantle), Trowbridge 3 (McDougald, Coleman, Larsen), McMahon 2 (McDougald, Larsen), Turley 4 (Logan, Covington, Hazle, Mathews), Larsen 4 (Rice, Covington, Mathews 2). SO, by—Pizarro 1 (McDougald), Johnson 2 (Larsen, Bauer), Trowbridge 1 (Howard), McMahon 2 (Collins, Coleman), Turley 2 (Adcock, Logan), Larsen 4 (Covington, Swatski, Adcock, Crandall). H, off—Buhl 2 in 2/3 innings, Pizarro 3 in 1 2/3, Conley 2 in 1 2/3, Johnson 0 in 2, Trowbridge 2 in 1, McMahon 0 in 2, Turley 3 in 1 2/3, Larsen 5 in 7 1/3. R&ER, off—Buhl 3-2, Pizarro 2-2, Conley 2-2, Trowbridge 5-5, Turley 1-1, Larsen 2-2. Wild pitch—Turley. HP, by—Larsen (Pafko). PB—Rice. WP—Larsen. LP—Buhl.

Umpires—McKinley (A), plate; Donatelli (N), 1b; Paparella (A), 2b; Conlan (N), 3b; Secory (N)—Chylak (A), foul lines. Time—3:18. Paid attendance—45,804. Net receipts—\$274,816.53.

2d Game—at New York, Thu., Oct. 3

MILWAUKEE (N)				NEW YORK (A)			
	ab	r	h		ab	r	h
Schoendienst, 2b	4	0	0	Bauer, rf	5	1	1
Logan, ss	3	1	1	McDougald, ss	4	0	0
Mathews, 3b	4	0	0	Mantle, cf	3	0	0
Aaron, cf	4	1	1	Berra, c	4	0	0
Adcock, 1b	4	1	2	Slaughter, lf	3	1	1
Torre, 1b	0	0	0	Simpson, 1b	4	0	0
Pafko, rf	4	1	1	Kubek, 3b	4	0	2
Covington, lf	4	0	2	Coleman, 2b	2	0	1
Crandall, c	3	0	1	bCollins	1	0	0
Burdette, p	3	0	0	Shantz, p	1	0	0
Totals	33	4	8	Ditmar, p	1	0	0
				aLumpe	1	0	1
				Grim, p	0	0	0
				cHoward	1	0	1
				dRichardson	0	0	0
				Totals	34	2	7

aSingled for Ditmar in 7th. bPopped out for Coleman in 9th. cSingled for Grim in 9th. dRan for Howard in 9th.

Milwaukee	0	1	2	0	0	0	0	0-4
New York	0	1	1	0	0	0	0	0-2

E—Mantle, Kubek. RBI—Adcock, Coleman, Logan, Bauer, Covington. 2B—Slaughter. 3B—Aaron. HR—Logan, Bauer. S—Burdette. DP—McDougald-Simpson. LOB—Milwaukee 5, New York 8. BB, off—Shantz 1 (Crandall), Burdette 3 (Slaughter, Coleman, Mantle). SO, by—Shantz 3 (Schoendienst, Logan, Mathews), Ditmar 1 (Covington), Grim 2 (Mathews, Aaron), Burdette 5 (Bauer, Simpson, Slaughter 2, Ditmar). H, off—Shantz 6 in 3 innings (faced 3 batters in 4th), Ditmar 1 in 4, Grim 1 in 2. R&ER, off—Shantz 4-3, Burdette 2-2. HP, by—Ditmar (Logan). LP—Shantz.

Umpires—Conlan (N), plate; McKinley (A), 1b; Donatelli (N), 2b; Paparella (A), 3b; Secory (N)—Chylak (A), foul lines. Time—2:26. Paid attendance—65,202. Net receipts—\$415,264.86.

4th Game—at Milwaukee, Sun., Oct. 6

NEW YORK (A)				MILWAUKEE (N)			
	ab	r	h		ab	r	h
Kubek, lf-cf	5	1	2	Schoendienst, 2b	4	0	1
Bauer, rf	5	0	1	Logan, ss	4	2	2
Mantle, cf	5	1	0	Mathews, 3b	4	2	2
Slaughter, lf	0	0	0	Aaron, cf	3	1	2
Berra, c	3	1	2	Covington, lf	4	0	0
McDougald, ss	4	1	2	Torre, 1b	3	1	1
Howard, 1b	4	1	1	cAdcock, 1b	1	0	0
Collins, 1b	0	0	0	Hazle, rf	2	0	0
Carey, 3b	4	0	0	Pafko, rf	2	0	0
Coleman, 2b	4	0	1	Crandall, c	4	0	0
Sturdivant, p	1	0	0	Spahn, p	3	0	0
aSimpson	1	0	0	dJones	0	0	0
Shantz, p	0	0	0	eMantilla	0	1	1
bLumpe	1	0	1	Totals	34	7	7
Kucks, p	0	0	0				
Byrne, p	1	0	0				
Grim, p	0	0	0				
Totals	38	5	11				

aHit into double play for Sturdivant in 5th. bSingled for Shantz in 8th. cGrounded out for Torre in 9th. dHit by pitch for Spahn in 10th. eRan for Jones in 10th.

New York	1	0	0	0	0	0	0	3	1
Milwaukee	0	0	4	0	0	0	0	0	3

E—none. RBI—McDougald, Aaron 3, Torre, Howard 3, Bauer, Logan, Mathews 2. 2B—Mathews, Carey, Schoendienst, Logan. 3B—Bauer. HR—Aaron, Torre, Howard, Mathews. SB—Covington. S—Schoendienst. DP—Schoendienst-Torre; Logan-Schoendienst-Torre 2. LOB—New York 4, Milwaukee 4. BB, off—Spahn 1 (Berra), Sturdivant 1 (Logan), Shantz 1 (Mathews), Kucks 1 (Aaron). SO, by—Spahn 2 (Mantle, Byrne), Sturdivant 1 (Hazle), Shantz 4 (Spahn 2, Aaron, Covington), Kucks 1 (Logan), Byrne 1 in 3, Kucks 1 in 2/3. R&ER, off—Sturdivant 4 in 4 innings, Shantz 0 in 3, Kucks 1 in 2/3, Byrne 0 in 1 1/3 (faced 1 batter in 10th), Grim 2 in 1/2 (one out when winning runs were scored). R&ER, off—Spahn 5-5, Sturdivant 4-4, Grim 5-5, Byrne 1-1, Grim 2-2. HP, by—Byrne (Jones). LP—Grim.

Umpires—Donatelli (N), plate; Paparella (A), 1b; Conlan (N), 2b; McKinley (A), 3b; Chylak (A)—Secory (N), foul lines. Time—2:31. Paid attendance—45,804. Net receipts—\$274,821.99.

NEW YORK (A) MILWAUKEE (N)

	ab	r	h		ab	r	h
Bauer, rf	4	0	2	Schoendienst, 2b	1	0	0
Kubek, cf	3	0	0	Mantilla, 2b	3	0	0
McDougald, ss	4	0	1	Logan, ss	4	0	0
erra, c	3	0	0	Mathews, 3b	3	1	1
Slusark, lf	3	2	2	Aaron, cf	3	0	2
Simpson, 1b	3	0	0	Adcock, 1b	0	0	0
Lumpe, 3b	3	0	0	Torre, 1b	0	0	0
Coleman, 2b	3	0	1	Pafko, rf	3	0	2
aMante, ..	0	0	0	Covington, lf	2	0	0
riley, p	0	0	0	Crandall, c	3	0	0
Ford, p	2	0	0	Burdette, p	3	0	0
bHoward, ..	1	0	0				
Richardson, 2b	0	0	0	Totals	28	1	6

Totals.....	30	0	7
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aRan for Coleman in 8th. bStruck out for Ford in 8th.

New York..... 0 0 0 0 0 0 0 0 0—0

Milwaukee..... 0 0 0 0 1 0 0 x-1
 E-Adcock. RBI-Adcock. S-Kubek, Covington.
 DP-Crandall-Logan; Mathews-Mantilla-Adcock;
 McDougald-Coleman-Simpson; Logan-Adcock. LOB-
 New York 4, Milwaukee 5. BB, off-Ford 1 (Mathews).
 SO, by-Burdette 5 (Simpson, Ford, Howard, Bauer,
 Kubek), Ford 2 (Mathews, Burdette), Turley 2 (Logan,
 Mathews). H, off-Ford 6 in 7 innings, Turley 0 in 1.
 R&ER, off-Ford 1-1. LP-Ford.

Umpires—Paparella (A), plate; Conlan (N), 1b; McKinley (A), 2b; Donatelli (N), 3b; Chylak (A)—Secory (N), foul lines. Time—2:00. Paid attendance—45,811. Net receipts—\$274,842.01.

7th Game—at New York, Thu., Oct. 10

MILWAUKEE (N) NEW YORK (A)

	ab	r	h		ab	r	h
Hazle, rf.	4	1	2	Bauer, rf.	4	0	1
DePafko, rf.	4	0	0	Slaughter, lf.	4	0	0
Logan, ss.	5	1	1	McMulle, cf.	4	0	0
Mathews, 3b.	4	1	1	Berra, c.	3	0	0
Aaron, cf.	5	1	2	McDougal, ss.	4	0	1
Covington, lf.	3	0	1	Kubek, 3b.	4	0	1
Torre, 1b.	2	0	0	Coleman, 2b.	4	0	2
Mantilla, 2b.	4	0	0	Collins, 1b.	2	0	0
Randall, c.	4	1	2	Sturdivant, p.	0	0	0
Burdette, p.	2	0	0	Howard, p.	0	0	0
				Byrne, p.	1	0	0
Totals.	34	5	9	Larson, p.	0	0	0

aLumpe.....	1	0	0
Ditmar, p.....	0	0	0
bSkowron, 1b...	3	0	0

Totals.....	35	0	7
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aStruck out for Shantz in 3d. bHit into forceout for
Ditmar in 5th. cStruck out for Sturdivant in 7th.
dFouled out for Hazle in 8th.

[illegible]

E—Kubek, McDougald, Berra, Mathews, RB1—
Mathews 2, Aaron, Torre, Crandall. 2B—Bauer, Mathews. HR—Crandall. S—Covington, Burdette, Mathews. DP—McDougald-Coleman-Skownron. LOB—
E—Mikes, 2B—New York. 3B—Aaron, 1B—Torre, 2B—Byrre 2 (Torre, Burdette), Burdette 1 (Berra). SO, 1Y—Larsen 2 (Hazle, Mathews), Dittmar 1 (Burdette), 2B—Larsen 2 (Torre, Burdette), Burdette 3 (Collins, Lumpe, toward). 4, of Larsen 3 in 2 1/3 innings, Shantz 1. Dittmar 1 in 2. Shantz 1 in 2. Byrre 1 in 2. &ER, of Larsen 3-2, Shantz 1-0, Byrre 1-1. LF—Larsen.

Umpires—McKinley (A), plate; Donatelli (N), 1b; Caparella (A), 2b; Conlan (N), 3b; Secory (N)—Chylak (A), foul lines. Time—2:34. Paid attendance—61,207. Net receipts—\$405,102.07.

Series Crowds, Receipts Set Records

The World Series in 1957 set a record for paid attendance and for net receipts. Attendance for the seven games was 94,712 and receipts \$2,475,978.94. Old records were 389,763 at the 1947 series between the New York Yankees and Brooklyn Dodgers and \$2,337,515.34 for the Yankees and Dodgers in 1955.

6th Game—at New York, Wed., Oct. 9

MILWAUKEE (N) NEW YORK (A)

	ab	r	h		ab	r	h
Mantilla, 2b.	3	0	0	Bauer, rf.	4	1	0
Logan, ss.	4	0	0	Kubeck, cf.	4	0	0
Mathews, 3b.	3	0	1	Slaughter, lf.	2	1	0
Aaron, cf.	4	1	1	Berra, c.	4	1	0
Covington, lf.	4	0	0	McDougal, ss.	3	0	1
Terre, 1b.	3	1	2	Lumpe, 3b.	3	0	1
Hazle, rf.	3	0	0	Simpson, 1b.	3	0	0
Rice, c.	3	0	0	Collins, 1b.	0	0	0
Buhl, p.	1	0	0	Colman, 2b.	2	0	1
Johnson, p.	1	0	0	Turley, p.	3	0	0
aSawatski	1	0	0				
McMahon, p.	0	0	0				
				Totals.	28	3	7

Totals..... 30 2 4
aStruck out for Johnson in 8th.

Milwaukee.....	0	0	0	0	1	0	1	0	0-2
New York.....	0	0	2	0	0	0	1	0	0-2

E—None. RBI—Berra 2, Torre, Aaron, Bauer. 2B—

Mathews, Colman, Berra. HR--Berra, Torre, Aaron, Rice. S--McDougal. DP--Rice-Logan; Covington-Turley; Turley-McDougal-Collins. LOB--Milwaukee 3, Buhl 4 (Slaughter, Coleman, Lumpe). SO, by--Sawatski. Buhl 4, Aaron, Kubiak, McDougal, Simpson, Johnson 5 (Simpson, Turley 2, Baur, McDougal). H, off--Buhl 4 in 2 2/3 innings. Johnson 2 in 1 1/3, McMahon 1 in 1. R&ER, off--Buhl 2, Johnson 1-1, Turley 2-2. Wild pitch--Buhl. LP--Johnson.

Umpires—Conlan (N), plate; McKinley (A), 1b; Donatelli (N), 2b; Paparella (A), 3b; Secory (N)—Chylak (A), foul lines. Time—2:09. Paid attendance—61,408. Net receipts—\$405,784.76.

World Series Batting Records

MILWAUKEE

	g	ab	r	h	2b	3b	hr	rl	bb	so	avg
Schoendienst, 2b	5	18	0	5	1	0	0	2	0	1	.278
Logan, ss	7	27	4	5	1	0	1	2	3	6	.185
Mathews, 3b	5	22	4	5	0	0	1	4	8	5	.227
Aaron, cf	5	28	5	11	0	0	3	1	1	6	.393
*Adcock, 1b	5	16	1	3	0	0	0	2	2	0	.200
*Torre, 1b	6	10	2	3	0	0	0	2	3	0	.300
*Pafko, rf	7	14	1	3	0	0	0	2	0	1	.214
Hazle, rf	4	13	2	2	0	0	0	0	1	2	.154
Covington, lf	7	24	1	5	1	0	0	1	2	6	.208
Crandall, c	6	19	1	4	0	0	1	1	1	1	.211
Rice, c	2	8	1	1	0	0	0	0	0	0	.167
†Demaris, p	1	0	0	0	0	0	0	0	0	0	.000
Spahn, p	2	4	0	0	0	0	0	0	0	2	.000
Johnson, p	3	1	0	0	0	0	0	0	0	0	.000
*Jones	3	2	0	0	0	0	0	0	0	0	.000
†Mantilla, 2b	4	10	1	0	0	0	0	0	1	0	.000
McMahon, p	3	0	0	0	0	0	0	0	0	0	.000
Burdette, p	3	8	0	0	0	0	0	0	1	2	.000
B. Eini, p	2	1	0	0	0	0	0	0	0	1	.000
Pizarro, p	1	0	0	0	0	0	0	0	0	0	.000
Conley, p	1	0	0	0	0	0	0	0	0	0	.000
*Sawatsky	2	2	0	0	0	0	0	0	0	2	.000
Trowbridge, p	1	0	0	0	0	0	0	0	0	0	.000
Totals	7	225	23	47	6	1	8	22	22	40	.209

Totals.....	7	225	23	47	6	1	8	22	22	40	.209
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NEW YORK

	g	ab	r	h	2b	3b	hr	rbi	bb	so	avg
Bauer, rf	7	31	3	8	2	1	2	6	1	6	.258
McDougald, ss	7	24	3	6	0	0	0	2	3	3	.250
†Mantle, cf	6	19	3	5	0	0	0	2	3	1	.263
*Skowron, 1b	2	0	0	0	0	0	0	0	0	0	.000
*Howard, 1b	6	11	2	3	0	0	1	3	1	3	.273
†Richardson, 2b	2	0	0	0	0	0	0	0	0	0	.000
Slaughter, lf	5	12	2	3	1	0	0	0	3	2	.250
*Collins, 1b	6	5	0	0	0	0	0	0	0	3	.000
Berra, c	7	25	5	8	1	0	1	2	4	0	.320
Simpson, 1b	5	12	0	1	0	0	0	1	0	4	.083
Carey, 3b	7	12	0	2	1	0	0	1	1	0	.286
Collet, 2b	7	22	2	5	0	0	0	3	1	3	.364
Kubak, 3b, lf, cf	7	28	4	8	0	0	2	4	4	0	.295
Ford, p	2	5	0	0	0	0	0	0	0	1	.000
Shantz, p	3	1	0	0	0	0	0	0	0	0	.000
Ditmar, p	2	1	0	0	0	0	0	0	0	1	.000
*Lumpe, 3b	6	14	0	4	0	0	0	2	1	1	.286
Grim, p	2	0	0	0	0	0	0	0	0	0	.000
Turley, p	3	4	0	0	0	0	0	0	0	2	.000
Carson, p	2	2	1	0	0	0	0	0	2	1	.000
Sturdivant, p	2	0	0	0	0	0	0	0	0	0	.000
Kucks, p	1	0	0	0	0	0	0	0	0	0	.000
Byrne, p	2	2	0	1	0	0	0	0	0	1	.600
Totals	7	230	25	57	7	1	7	25	22	34	.248

Totals..... 7 230 25 57 7 1 7 25 22 34 .248

* Pinch hitter. † Pinch runner.

MINOR LEAGUE BASEBALL

JUNIOR WORLD SERIES

Denver (American Association) defeated Buffalo (International League), 4 games to 1.

DIXIE SERIES

Houston (Texas League) defeated Atlanta (Southern Association), 4 games to 2

OPEN CLASSIFICATION

Pacific Coast League

FINAL STANDING OF THE CLUBS

	W	L		W	L
San Francisco....	101	67	Seattle.....	87	80
Vancouver.....	97	70	Los Angeles....	80	88
Hollywood.....	94	74	Sacramento....	63	105
San Diego.....	89	79	Portland.....	60	108

THE LEADERS

BA—Ken Aspromonte, San Francisco.....	.334
HR—Steve Bilko, Los Angeles.....	56
RBI—Steve Bilko, Los Angeles.....	140
Pitching (wins)—Leo Kiely, San Francisco.....	21
Pitching (ERA)—Morrie Martin, Vancouver.....	1.90

CLASS AAA

American Association

FINAL STANDING OF THE CLUBS

	W	L		W	L
Wichita.....	93	61	Omaha.....	76	78
*Denver.....	90	64	Indianapolis....	74	80
Minneapolis....	85	69	Charleston.....	67	87
St. Paul.....	82	72	Louisville.....	49	105

* Won playoffs.

THE LEADERS

BA—Norm Sieborn, Denver.....	.349
HR—Marv Throneberry, Denver.....	40
RBI—Marv Throneberry, Denver.....	124
Pitching (wins)—Carlton Willey, Wichita.....	21
Pitching (ERA)—Frank Barnes, Omaha.....	2.41

International League

FINAL STANDING OF THE CLUBS

	W	L		W	L
Toronto.....	88	65	Rochester.....	74	80
*Buffalo.....	88	66	Havana.....	72	82
Richmond.....	81	73	Columbus.....	69	85
Miami.....	75	78	Montreal.....	68	86

* Won playoffs.

THE LEADERS

BA—Joe Caffie, Buffalo.....	.331
HR—Luke Easter, Buffalo.....	40
RBI—Luke Easter, Buffalo.....	127
Pitching (wins)—Humberto Robinson, Toronto, and Walt Craddock, Buffalo.....	18
Pitching (ERA)—Miguel Cuellar, Cubans.....	2.55

CLASS AA

League and champion	Playoff winner
Mexican—Yucatan.....	Mexico City Reds
Southern Assn.—Atlanta.....	Atlanta
Texas—Dallas.....	Houston

CLASS A

Eastern—Binghamton.....	Reading
South Atlantic—Augusta.....	Charlotte
Western—Lincoln.....	No playoffs

CLASS B

Big State—Corpus Christi (1st half), Victoria (2d half).....	Victoria
Carolina—Durham (1st half), High Point—Thomasville (2d half).....	Durham
Northwest—Eugene (1st half), Wenatchee (2d half).....	Wenatchee
Southwestern—Hobbs.....	No playoffs
Three-I—Evansville.....	No playoffs

CLASS C

Arizona-Mexico—Phoenix (both halves)....	No playoffs
California—Visalia (both halves).....	Salinas
Central Mexican—Chihuahua.....	No playoffs
Evangeline—No 1st half champion, Alexandria (2d half).....	No playoffs
Northern—Duluth-Superior (1st half), Winnipeg (2d half).....	Winnipeg
Pioneer—Salt Lake City (1st half), Billings (2d half).....	Billings

CLASS D

Alabama-Florida—Montgomery.....	
Appalachian—Bluefield.....	No playoffs
Florida State—Palatka (1st half), Tampa (2d half).....	Tampa
Georgia-Florida—Valdosta (1st half), Albany (2d half).....	Albany
Midwest—Kokomo.....	Decatur
Nebraska State—Grand Island.....	No playoffs
New York-Penn—Wellsville.....	Erie
Sooner State—Paris.....	Ardmore

Other Baseball Champions

Hearst Sandlot Classic—New York All-Stars
Little League—Monterrey, Mexico
Babe Ruth League—Pensacola, Fla.
National Amateur Federation—Lorain, Ohio
National Amateur Junior Federation—Altoona, Pa.
American Legion—Robert E. Bentley Post, Cincinnati
National Congress (Non-Pro)—Plymouth Oilers, Sinton, Tex.
Global World Series (Non-Pro)—Japan
Colt League—La Mesa, Calif.
P-O-N-Y League—Lufkin, Tex.
National Collegiate—U. of California
Europe—Netherlands
American Amateur Congress—Birmingham, Ala.
National Prep League—South Hills, Pittsburgh
Little Boys League—Dothan, Ala.
National Boys League—Greenville, S. C.
All-American Amateur Assn.—Leone's Club, Baltimore

SOFTBALL

Amateur Softball Association

Men—Clearwater (Fla.) Bombers
Women—Fresno (Calif.) Hacienda Rockets
Men's slow pitch—Gatliff Auto Sales, Newport, Ky.
Women's slow pitch—Dana Gardens, Cincinnati

National Softball Congress

Men—San Pedro, Calif.

Fangio Wins Florida Grand Prix

Juan Manuel Fangio of Argentina and Jean Behra of France, driving a 4.5-liter Maserati, won the 1957 twelve-hour Grand Prix of Endurance for sports cars at Sebring, Fla.

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HOW TO USE THIS BOOK

1. For specific information, turn to the Alphabetical Index, page 931.
2. To understand the scope and organization of **INFORMATION PLEASE ALMANAC** read the Table of Contents.
3. Important. This is not *only* a reference book. In addition to the mass of facts and figures, we have included timely and significant articles, prepared by experts and described below.

OPERATION NEWS

DETAILED BACKGROUND and interpretation of major issues in domestic and foreign news. This is a guide that will give meaning to tomorrow's headlines. Keep this section handy when reading your newspaper.

MAN INVADES SPACE

THIS SECTION COVERS PLANS for the International Geophysical Year, what we expect to learn about the earth's atmosphere, the story of the United States Vanguard Rocket and all we know about Sputnik.

CIVIL RIGHTS—THE SUPREME COURT

TURN TO THIS SECTION for a discussion of the history of the Supreme Court, with special emphasis on its role as guardian of civil rights.

DISARMAMENT AND SECURITY

DISCUSSES THE SEARCH for a solution to the armaments race in the light of the struggle between East and West. Explains foreign policies of the U. S. and U.S.S.R. and how they affect the Middle East.

HOW NOT TO LOSE MONEY

SPELLS IT OUT: how much to invest—how often—in what amounts; describes common stocks, government or corporate bonds; mutual funds; explains how to read a stock table.

BREAKTHROUGHS IN SCIENCE

HERE IS AN EXPLANATION of major scientific advances in recent times: atomic energy—its peacetime uses; rockets, jets and the sonic barrier; chemistry—plastics, rubber and fibers; viruses, vitamins and the wonder drugs; automation and many other innovations of the first importance.

RELEARNING MATHEMATICS: ALGEBRA

THIS REFRESHER COURSE in elementary algebra explains the basic concepts and procedures taught today. Designed to help parents help their children.

The following exclusive features of the *Information Please Almanac* are of particular interest to many people:

CROSSWORD PUZZLE GUIDE—WORD SECTION—

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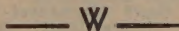
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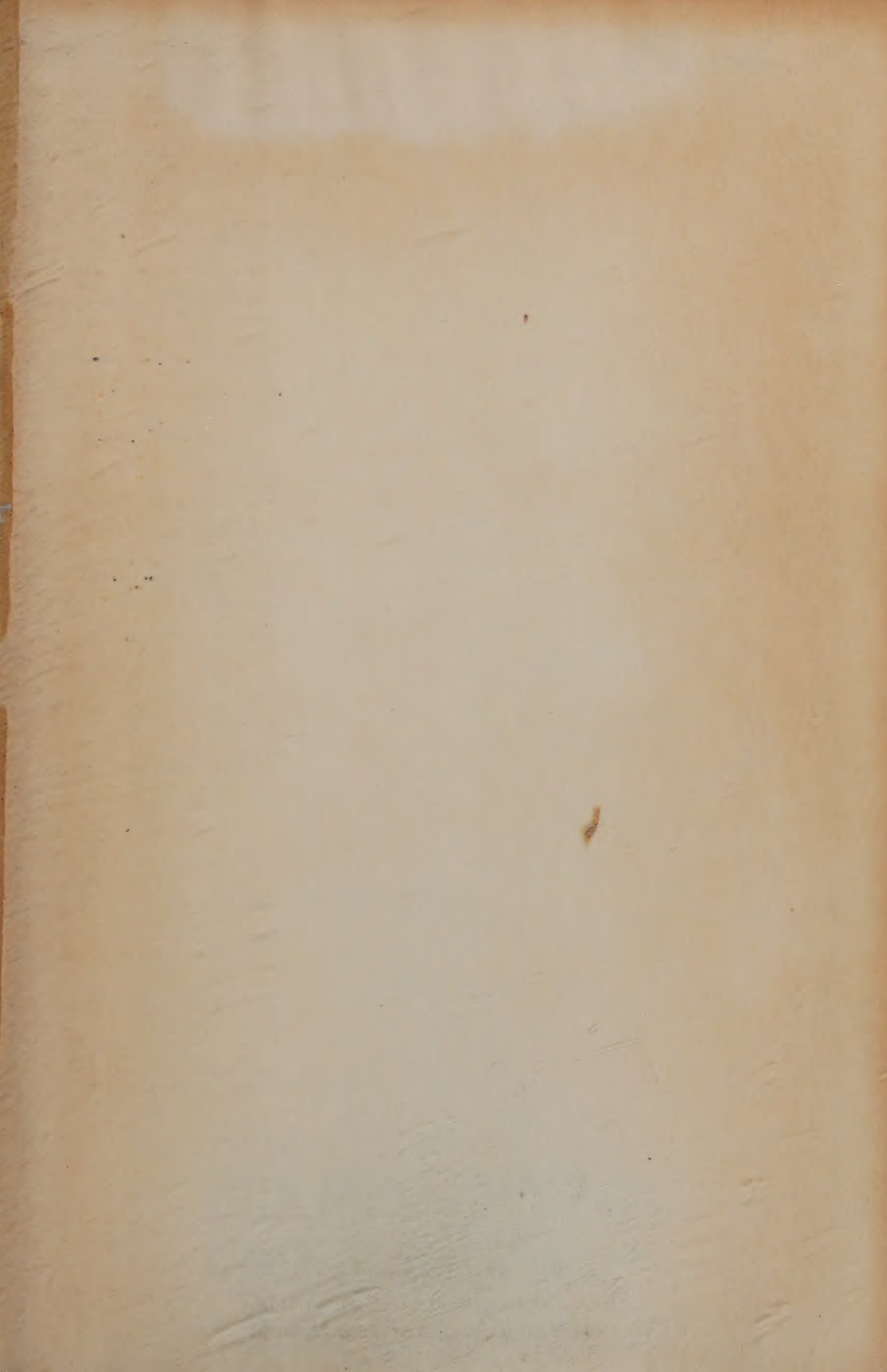
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